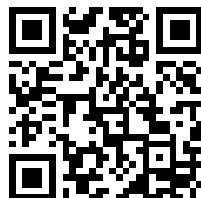

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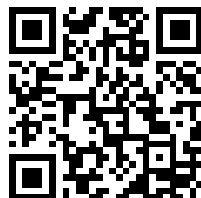
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QUEEN'S QUARTERLY

JULY, 1902.

	PAGE.
I. PRINCIPAL GRANT, - - - - -	1
II. CATARAQUI MARSH, (A Bird Study; Illustrated.) By Dr. C. K. Clarke - - - - -	5
III. DOWN THE ST. LAWRENCE ON A TIMBER RAFT. (Illustrated.) By Adam Shortt - - - - -	16
IV. THE JOHANNINE THEOLOGY. By John Macnaughton	35
V. THE MOON HOAX. By S. A. Mitchell - - - - -	48
VI. THOMAS AQUINAS. By John Watson - - - - -	58
VII. THE MANUFACTURE OF BEET SUGAR. By John Waddell - - - - -	71
VIII. A SCHOOL OF FORESTRY FOR ONTARIO. By W. L. Goodwin - - - - -	77
IX. THE WOMEN'S RESIDENCE. By Alice A. Chown -	80
X. THE COLLEGE ANNUAL REPORT - - - - -	84
XI. THE SCHOOL OF MINING ANNUAL REPORT - -	97
XII. RECENT PROPHETIC LITERATURE. By W. G. Jordan	108
XIII. CURRENT EVENTS - - - - -	110
The Recent Trade Conference.	
The British Grain Tax.	
The Shipping Combine.	
Peace in South Africa.	
Queen's and the Church.	



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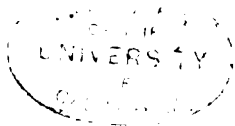
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Queen's Quarterly.

VOL. X.

JULY, 1902.

No. 1

PRINCIPAL GRANT.

NUMEROUS and generous have been the tributes of respect paid to the memory of Principal Grant. His loss is mourned by Church and State, as well as by our University. This is fitting, for they, too, mourn their own, and had his loss to them been less, it had not been so great to us. The press and the pulpit have spoken of his greatness and worth as they knew them; we may add a word of tribute to his unique personality as a college principal, and his ardent devotion to Queen's.

The University was most fortunate in securing him as Principal at a very timely juncture in his own career, as well as in the history of the University. He had already given proof of exceptional natural gifts, but was not yet committed to his life's work. Hence he came to Queen's, not as one who has already spent his best energies, and achieved his reputation in another field, and who is prepared, therefore, to welcome a position of *otium cum dignitate* in which to spend the declining years of a worthy life. On the contrary he came to his new field of strenuous labour, in the full bloom of overflowing energy and ambition. He found in the Principalship of Queen's, unlimited scope for all his capacities, and free encouragement for the conception and realization of inspiring ideals. The opportunity and the man had found a happy meeting. His new position gave encouragement and outlet to the best that was in him; and he, in turn, through his energy and enthusiasm, greatly developed the University.

The breadth and catholicity of his spirit did not permit him to rest content with a narrow academic interpretation of his duties. He saw the University not as a refuge for cloistered scholars, who might there be shielded from the seemingly ignoble strife of the every-day life of the world, as one of the most vital and responsible influences in the concrete national life. His vividly real and vitalizing interpretation of his own and the University's functions, was but the natural outcome of his wide and vigorous interest in all the larger problems of humanity. From the University he looked out upon life as from a lofty vantage ground com-

manding a varied and inspiring range of vision. Had he confined himself within a narrower conception of his new position, he could neither have seen the wider possibilities of that position in its relation to the welfare of the country, nor have attracted to the support of the University increasing numbers of benefactors and students.

A university in a democratic country must keep itself in touch with the living needs of the people. While it is necessary that it should not lower its high ideals, yet it must be certain that these ideals are truly high, and, above all, that they are real and living. The university cannot, on the one hand, seek a superficial popularity by pandering merely to low and short-sighted standards of the useful or expedient, nor, on the other can it afford to maintain an intellectual aloofness, which will not deign to recognize in a free and liberal spirit the great practical interests of the nation. The university must actively and with enthusiasm assist in raising the spiritual tone of the country, and in promoting an enlightened and tolerant public spirit, which will regard the great issues of life, personal and national, from a wide and self-responsible point of view. It was the aspiration of Principal Grant to make the influence of Queen's tell in these directions. His wide interest in the great problems of men and nations fittingly qualified him for his position as the head of a university which aspires to exert a national influence.

Again, his wide outlook gave scope for the development of the broadest sympathies, and the acquisition of a mental perspective, indispensable to a calm judgment on varied and competing, though correlated interests. He possessed, in a marked degree, the rare but all-important quality among men of his position, of being able to take a fair and impartial view of all sides of modern university work. One of the natural tendencies of present academic specialization is to give to each specialist an exaggerated conception of the importance of his own subject in the general scheme of education. Thus even the head of a university, being almost of necessity a man who has taken a special, personal interest in one or other side of the academic field, is apt, unless a man of wide sympathy and rare judgment, to show a more or less marked bias toward one or other department of the university's work.

Principal Grant, though a man of broad culture and remarkable intellectual vigor, did not pretend to be a scholar in any specialized department. His time was too completely devoted to the general interests of the University and the larger issues of the nation, the Empire and humanity, to permit of that close and patient research which is indispensable to the accurate scholar. He had, however, what is

much rarer than sectional scholarship, and that was a broad and intelligent grasp of the larger purposes of education, and a remarkable capacity for rapidly seizing the essential features of a situation or a subject and presenting them in a vivid and attractive form.

His greatest contribution to the general educational life of the University, was the inspiration and enthusiasm which he fostered in the student body, towards the pursuit of knowledge and the upbuilding of a free and self-reliant personality. Though the distinctive Queen's spirit was already in the atmosphere of the institution when he came to it, yet he did much to enlarge and deepen it, while it reacted with immense stimulus upon himself. An infectious inspiration is, of all things, the most indispensable in a university atmosphere. Without it text-books are as good as lectures, and often much better. In these days of unlimited books and other sources of second-hand inspiration, the university cannot adequately justify its position as a merely formal imparters of knowledge. But if the university is able to infuse into the general body of students, as well as its special classes, a spirit of personal enthusiasm, which clothes with vital interest the dry bones of knowledge, and teaches the student how to extract from dull-looking volumes and the forbidding raw materials of science, the living bread of intellectual life, it has abundantly justified its existence and insured the devotion of its students and graduates.

Two of the most marked characteristics of Principal Grant's personality were his independence and courage. Once firmly convinced that he was right, he would face any odds or lead the most forlorn hope with a vigor and assurance which were themselves often the guarantee of victory. His independence of mind, expressed in fresh and stimulating language, was a most bracing spiritual tonic. This characteristic was associated with a phase of his personality often perplexing to many who regard a rigid and literal self-consistency as the highest intellectual virtue. He never shrank from controversy on any subject in which he was vitally interested, and he invariably defended his position with a confident vigor and adroit resourcefulness of argument which it was very difficult to match. Yet he was singularly free from malice or bigotry, and in the end always welcomed with open-minded candor new phases of truth. Having the courage to change his views he vindicated his capacity for intellectual growth. He maintained throughout life a fresh and youthful interest in new ideas and new phases of the world's development, altogether escaping that intellectual ossification which is so common a spiritual misfortune. One of the natural accompaniments of his spiritual courage and masterful energy, was his wholesome optim-

ism. In this there was nothing of that more popular, grasshopper type of optimism, of which a cheerful indolence and irresponsibility are the chief characteristics. He was neither blind to the many and serious evils which threaten society, nor carelessly confident that all the evils of life must somehow right one another. He was simply confident that with determined energy and perseverance in the promotion of rational ideals, the evils which were sure to rise could be overcome and progress maintained. His optimism, therefore, was accompanied by searching criticism, and rested upon a foundation of devotion and sacrifice.

To no part of the University spirit did Principal Grant make a more noted contribution than to that of self-sacrificing loyalty to Queen's and her future. His personal devotion to Queen's was so unbounded and so unselfish as inevitably to beget more or less of a similar devotion in others. Most indisputable evidence of the sincerity of their self-sacrificing spirit has been afforded by the friends, graduates and students of the University. Though the Principal was sometimes forced to make heavy demands upon the time, energy and possessions of the members and friends of the institution, yet he never asked anyone to do more, and very seldom as much as he had himself already undertaken. It was impossible not to follow with enthusiasm a leader who so constantly commanded by example rather than by word.

Even up to the very last few hours of his life he was planning for the accomplishment of pressing needs incident to the present expansion of the University and the affiliated School of Mines, in which he was no less absorbingly interested. Yet he was destined to see only the borders of the promised land. Though the new Arts Building was nearly completed before his death, he had never seen the interior of it, and the walls of the Engineering and Mining buildings were still slowly rising from the ground as he passed away from the busy scene. The foundation stone of Grant Hall was to have been laid next October to commemorate a quarter century of his work at Queen's. But though in the flesh we shall see him no more, his spirit and his ideals will long continue to vitalize the life and activity of the University. It now becomes the duty of those who are left to guide the destiny of Queen's, to take up with confidence and carry on to completion the numerous works that have fallen from his hands. We cannot do him greater honour than by continuing to build up, in the interests of the whole land, the University for which he spent so lavishly the rare treasures of his life and personality.

ADAM SHORTT.

CATARAQUI MARSH.

AN EXTRACT FROM A SERIES OF NATURE SKETCHES TO BE

PUBLISHED AT AN EARLY DATE.

CATARAQUI marsh is a favorite resort, and even in winter it always has a few secrets worth finding out. It is no ordinary marsh, but then no marsh can be called ordinary, if one studies it closely, and yet Cataraqui has a charm of its own. Perhaps it is that I know it so well, and have learned what to expect there. It is not a lonely spot either, and to a certain extent is a highway for as thorough a set of vagabonds as ever broke the laws of the Province. They destroy the fish during the spawning season, rob the birds' nests, and shoot the ducks and waders remorselessly, and yet many birds succeed in evading these persecutors. It so happens that the wild rice flourishes in this spot, and by the first of June is clear of the water and makes such a thick carpet, that few of the marauders care to shove a skiff through anything but the main channel.

The wise birds leave their nesting operations until after that date.

May 19th, 1902.—B. and I rowed up the creek to learn how the Florida gallinules and pied-billed grebes were faring, and yesterday two of us paddled through the rice, which has just reached the surface, but as it was the Sabbath, and the "unco guid" were watching us, I was afraid to use the camera. It was a pity, too, because several good snaps presented themselves. I am a moral coward on Sunday and have not the courage of my convictions, even in the woods, and am so afraid of hurting other people's feelings, that I rarely transgress the rules of propriety, as laid down by the extraordinarily virtuous. A very stiff churchman was discussing this subject of Sunday behavior with me this morning and remarked that his wife was a stern disciplinarian in such matters when in civilized communities (this is one of them), but absolutely regardless of the fourth commandment in the woods . . . Could I suggest an explanation? I could, but didn't; there are some occasions on which even the truth is better withheld.

I think I have already confessed that bird photography is a sad disappointment as a rule, but the camera is invaluable when nests are to be studied. What we really missed yesterday was the opportunity, if we cared to take it, to photograph two Virginian rails sneaking through the dead rushes, three wild ducks feeding within easy range of the camera, and a hoary woodchuck making for his hole in the bank, with a deliberation that meant an easy chance. I

sincerely regretted the rails, because they are so shy that one rarely gets within working distance of them, however, to counterbalance this, we had the satisfaction of knowing that we had shocked no one unless they regarded paddling as a deadly sin. Some of the fine distinctions have always been too much for me, and I never feel certain when I am beyond criticism. To-day the air was as full of fog, as it was of sunshine yesterday, but Cataraqui is beautiful under either condition, and the fog seems to accentuate the pungency of the odors so characteristic of the marsh. To me these odors are not unpleasant, but a part of this wonderland.

B. felt certain that we should locate the nests of several pied-billed grebes without difficulty, as she wished to photograph them, and we had scarcely passed beyond the bridge before three were seen, but if they had been occupied, the eggs had been taken by the crows. We exonerated boys because they rarely discover the secret of the grebe's nest. The crow pests of civilized communities miss little, and are the freebooters of the feathered world. They deserve the enmity shown to them by all classes of birds. A third nest was so carefully covered up with weeds, that we knew the complement of eggs had been laid, so photographed it just as it was, and then with the weeds removed. Eight long eggs, sharply pointed at each end, were revealed, and although they are a delicate green just now, bye and bye they will be deeply stained by the water-soaked weeds of which the nest is built. The nest is a marvel of clever architecture, composed of weeds and mud carefully piled in a compact mass, and anchored by four strands of weed-rope, cunningly guyed in different directions. The pied-billed grebes carry on the affairs of incubation in a style of their own, and succeed where it might be supposed failure would be inevitable. The birds sit on their floating island during the night, but in the day cover their eggs with masses of wet weeds, and depend on the sun to develop enough heat in the decaying vegetable matter to carry on the hatching process. To the casual observer the heap of damp weeds would suggest nothing nest like, so the structure is likely to be overlooked unless one knows what to search for. All birds of this class place their nests close to the edge of the rushes so that they can slip quietly into the water when disturbed. Both loons and grebe follow this plan almost invariably. I was puzzled on one occasion by the unusual behavior of a pied-billed grebe, discovered sitting on her nest. She allowed me to approach within a few feet, without making the least attempt to escape. Close inspection showed that something was moving by her side, and then from beneath her wings four pairs of bright eyes peered inquisitively. First, one little fluffy form came out, then another, and in a moment or so four



NEST OF PIED-BILLED GREBE—SHOWING WEEDS COVERING THE EGGS.



NEST OF PIED-BILLED GREBE—WEEDS REMOVED FROM EGGS.

baby dabchicks were at sea on their mother's back. It was a pretty sight and the mother paddled about fearlessly with her family, apparently satisfied that such precious balls of down were just as sacred to us as to her.

Loons, when they believe their progeny to be in danger carry the young on their backs, and I saw one fearless bird deliberately offer her life to save that of her little ones. Fortunately there were some tender hearted women on the steam yacht when the incident occurred: I do not care for steam launches and rarely go in them more than once a year, and then only to prove my amiability. On this occasion a young gentleman, who was very proud of his cleverness with a twenty-two calibre rifle, was one of the party. It was evident that his skill was the outcome of long practice, for he popped away at everything having life, and when at last a loon rose near the yacht, commenced a perfect fusillade. The loon's agitation was pitiful, and her behavior at complete variance with usual loon methods. She made no effort to dive, and when we were within twenty yards I noticed her deliberately turn broadside to us and cover with her body two baby loons sitting on her back. It was an act of the most devoted heroism, and it may be interesting reading to learn that both young man and rifle were kept severely in the background for the rest of the day. . . . The loons were not injured.

The Florida gallinules have apparently not laid their eggs yet, although we found several nests, simple affairs of rushes placed among the reeds. There is something infectious in the laughter of these noisy cacklers, and humorists and gossips must be common among them if we believe all that we hear. These old ladies of the marsh are always in evidence, spluttering about near the main thoroughfare, apparently discussing those passing by with all the art of the village busy-body, and never failing to discover something grotesque or absurd in my appearance. They enjoy their discovery so heartily that it would be selfish not to join in the laugh. If you go to the marsh you too will be selected as the victim of their cachinnatory sarcasm. It requires complacency to endure it, and a well-balanced mind to resist embarrassment while it is going on.

Cataraqui Bridge is a head centre for loungers with whom one can feel sympathy, as they are drawn from a class who realize that this marsh is a wonderland, and who thirst for knowledge without being able to acquire more than the rudiments. All, or nearly all, have fishing rods and lines, and the supply of pan fish never gives out. The bridge is rarely deserted from dawn to dusk, but this year the fishermen will find less room than formerly, as the Solons of the County Council have in their wisdom filled up all of the spans but

one, with broken stone, which costs so much less than timber. The great pity of it is that the new arrangement has made the case of the phoebes almost hopeless. For twenty years—I cannot speak of a prior period—the phoebes nested beneath this bridge, in spite of a thousand discouragements. They ordinarily built their first nest under the middle span. It was almost invariably robbed by the urchins, who infest Cataraqui until the rice grows up. . . . When the first site failed, a second span was used, and on one occasion at least the third was resorted to before success greeted them. There seemed to be a certainty of the result if they persisted. The birds were there as usual this spring, but yesterday were absent; apparently the County Council had been too much for them.

The wild ducks know the fame of Cataraqui Bridge as a lounging spot, and pass over it at an astonishing height, and it is well that they do so, for in duck season, and sometimes out of it, the would-be duck hunters are numbered by the twenties, but it is rarely that they are successful. They think the ducks the attraction, but scarcely realize that it is the fascination of Cataraqui marsh holds them within its power.

A generation or two ago, the importance of the bridge was recognized, and in the grim days when there was a reasonable suspicion that Yankee smartness might induce the Southerners to invade Canada, no one doubted that they would come via Cataraqui Bridge. The war of 1812 had made people suspicious, and the U. E. Loyalists generally travelled this road. One can yet trace the outlines of the earthworks overlooking the approaches, and a tumble-down log cabin is all that is left of what was originally a substantial block house. When the Yankees came it was by another road, and with the desire to conquer by more peaceful plans than proclamations offering liberty to people who already possessed it.

The block houses, metaphorical ones, are all on the other side now, and are built in the Chinese wall of protection that has done more to make Canada enthusiastically British in sentiment, and independent in action, than anything else that could have been devised. It is wonderful, after all, how much the commercial spirit has to do with things that go by much loftier titles. The present invasion of Canada by American capital is the beginning of a better era both for us and our neighbors, who are just beginning to find out that after all we are worth cultivating in a friendly way.

The terns have had a hard time of it, what with plume hunters in the south and egg collectors in the north, but the black terns have generally managed to hold their own in Cataraqui marsh, and that, too, in spite of persecution. They have themselves to blame to a cer-

tain extent, as they complain so bitterly before they are hurt, and really attract attention to their nesting places, and when boys and crows raid these, they follow their despoilers to the end, making much ado about their loss. When the bogs are too wet the terns make their crude nests on the tops of the muskrat houses, and have wisdom enough to select quiet corners where skiffs and punts rarely penetrate, although such corners are by no means common.

When the sunset promises to be gorgeous, and the wild rice is the daintiest green imaginable, it is our custom to paddle up the creek to watch the black terns complete a picture too lovely to be reproduced. These exquisite birds in their beautiful plumage of well-arranged contrasts, look their very best with the setting sun shining on them, and they are easily the pride of the marsh.

While it is true that they feed largely on the useful dragon flies, what odds, we would rather endure mosquitoes than miss the terns. For a year or two I feared that they had deserted Cataraqui, but the explanation came in due time. These were high water seasons, and the bogs were flooded to such an extent that nesting was impossible, but when the lake level was lowered once more, the terns came back in greater numbers than ever, and one season about sixty pairs flourished in the marsh—some of the local William Tells heard of them, and found them a shining mark for their skill, a superintendent of a Sunday School being the chief offender. Ordinarily, I hesitate long before daring to brave the scorn of a righteous man, but on this occasion asked a game inspector to interview the expert shot. He succeeding in convincing him that it was hardly consistent with the dignity of his position to teach little boys to be good, on Sunday, while he not only broke the law himself, but was guilty of wanton cruelty on week days. The result was the immediate conversion of the offender—what means the game inspector employed I know not, but *he* at least has taken a warm interest in the terns ever since, and never fails to ask after them. If the superintendent had carried his class of boys to watch the terns and given them a confession of his sins, the lesson might have been better still.

If the terns are Cataraqui's aristocrats, the marsh wrens and red-winged black birds may be looked on as the common folk, although when it comes to gorgeous coloring, the male black bird can hold his own in any company. He makes the mistake that so many good looking people of his class fall into, and betrays himself when he undertakes to discuss the affairs of the nation. His voice tells his common origin, and his endless rick-a-ree is monotonous in the extreme. The long-billed marsh wren is an exceedingly popular fellow, and although just as harsh of voice as the rick-a-ree, and an in-

veterate chatterer, expressing decided opinions about everything in an off-hand way—still has many claims to our attention. As a successful house-builder he has few rivals, and it must require no end of industry and skill to fasten a globular nest, some five or six inches in diameter, to a rush. These nests are skilfully made up of reeds and grass closely interwoven, and lined with fine grass or down from the cat-tails. It is a bulky structure for such a tiny bird to occupy, and the only modest thing about it is the entrance, which is not only small but difficult to find. Large as the nest is it is not out of proportion with the ideas of the builders. These birds are small of body, but large in ambition, and can outdo the magnates who own a mansion for winter and a cottage for the summer. One pair of wrens will commonly build six nests before making one to their liking, and then no one but a wren could explain where the others failed. This multiple nest building is a problem worthy of further investigation. Off-hand it might be suggested that the peculiar habit is the outcome of professional pride on the part of the male, or of an unusual display of fault finding by Jennie Wren, but the facts are undisputed, and you may sometimes find from two to six nests built by the same pair of birds in one season. Of course the rule is to provide but one structure, but the departures from this are very common. I fancy that the most prolific birds are those which are the most harried and preyed upon, and no doubt the true explanation of the several nests will be found in connection with the idea of protection.

During the breeding season the wrens are the most energetic workers and restless chatterers in the marsh, and as they hang in every conceivable position with their tails cocked over their heads at an angle that suggests danger to the birds' equilibrium, they form an interesting and amusing study. They are just as restless as warblers, their mental state during the early part of June almost borders on delirium, and it can truthfully be said that they do not seem to know whether they are standing on their heads or their heels.

None of the wrens are vocalists of even a passable order, and the long-billed marsh wren is possibly the most execrable performer of the lot, and yet the marsh would be lonely without his chatterings. This case is on a par with the music of the bagpipes, which is said to be soul-stirring and entrancing when heard in the mountains and glens, or on the battlefield. I know that the wrens harmonize with their surroundings in the marsh—I am not so sure of the bagpipes, never having heard them under the favorable conditions referred to—I should like to be on the mountain though and have the piper in the glen, so that if the tradition did not work out properly it would be possible to drop a rock on the performer. The field of battle is

really the proper place for the piper though, and if current newspaper history can be depended on, the enemy invariably calculates the effect of this music both on its opponents and itself, and promptly puts an end to it.

If the gallinules, grebes, rick-a-rees, and marsh wrens supply the visitor who passes up the main creek, with what might be called volks lied, if he will put on his wading boots and make his way to a stretch where the marsh hay flourishes he will meet two or three prodigies, veritable Jenny Linds, but of these I shall have something to say later on.

The bobolink is there by the dozens, and in some thorn trees at the edge of the marsh both thrashers and cat-birds thrive famously. The meadow lark and swamp sparrows are there too, and just where the buck bean blooms luxuriously, the Virginian rail and marsh harrier have their nesting places. The harrier does not deserve the abuse he gets from other birds, as he is possibly the most harmless and useful of all the hawk family, and makes an honest living where many birds would starve.

I was discussing the marsh with Jimmy McGuire last week, and find that this young gentleman of twelve has decided opinions of his own. He thinks there are a few things about Cataraqui that I am not cognizant of, and as Master James has already made some discoveries of value on his own account, he may be right—we shall see. He asked "how I was off for marsh owl's eggs," and after much questioning and cross-questioning, out of which the little man emerged with honor and statements unshaken, it seemed evident that owls of some kind have taken up their residence in the marsh itself. It will in all probability prove to be the short-eared variety, a wonderfully rare bird here. . . . I have faith in Jimmy, too, because he is not only willing to risk his neck, but keeps his eyes open, and through this unusual habit finds things worth looking at. I am especially proud of him because he has proved a theory I announced in 1895—that the long-eared owl would be found breeding here. During that summer a young long-eared owl was captured in the Rockwood grounds—since that date several others have been seen. Theory founded on such facts as these is usually sound. Jimmy's eyes were as big as saucers when he told me that he had found "a terrible big bird on a crow's nest in a pine tree, and the crow's eggs were white and just like bantams." The description was somewhat involved, but fitted the long-eared owls perfectly. Jimmy was quite right, in the pine trees at the edge of the marsh two pairs of long-eared owls were endeavoring to hatch out their eggs in deserted crows' nests. The first bird departed from classical rules, and the nest as well, in a

great hurry when disturbed—the second behaved as the books say it should, according to owl custom—sat on a neighboring tree snapping its beak and showing resentment. This is probably the first time long-eared owls have been positively identified as breeding in this part of Ontario, so the youthful McGuire has already commenced the ascent of the ladder of fame, and we shall both go up another rung when the short-ears are found.

It is strange that birds of such nocturnal habits as the long eared owls should prefer old crows' nests to hollow trees, yet such is the



NEST AND EGGS OF FLORIDA GALLINULE.

habit, and when found are generally near a marsh or water. They are even more useful than the little screech owls.

On May 22nd, 1902, I paddled up the creek to get a photograph of the gallinules' nest. By some unusual chance the bridge was deserted, and the marsh strangely silent, although the bobolinks were in full song in their particular meadow. It began to look as if the gallinules were behind time, as this is an early season for birds, but bye and bye, I saw a cautious movement in the rushes and presently Madam flew off with a burst of derisive laughter that meant "find my nest if you can." He laughs best who laughs last, and the nest cer-

tainly was worth looking for, and photographing when found, as it contained twelve eggs. A thunder storm was working up from the north west, so I hastened to make a picture while the sun shone, and was fortunate enough in getting a happy moment.

The bitterns have apparently not made their nests yet, although I saw several pairs and heard the cry for "plum pud-ding" in many parts of the marsh. It is an unseasonable order at the end of May, but then in matters gastronomic one gets surprises occasionally.

The least bittern in his beautiful dress was flitting about from island to island, in much the same way as his larger cousin.

The American bittern always impresses me, and his quaint measured gait is in keeping with his general character. When not anxious to leave a favorite feeding spot it is amusing to watch him attempting to become a part of the landscape with bill straight up in the air, to imitate the rushes, I suppose.

Two or three summers ago I raised English and Mongolian pheasants, and after setting some at liberty the others were taken over by local enthusiasts, who have also allowed a few of them freedom. From time to time one is shot, and doubtless extermination will be their fate—in the meanwhile one pair has obtained a foothold in the marsh, and might succeed in raising a brood if not disturbed. Their case though is hopeless. The rascally crows know the value of a marsh too well not to utilize every available nesting spot about it, and already their depredations on the small birds have commenced. Nothing seems to escape them, and they are remorseless.

The black-billed cuckoo has his haunts there too, and now and then one catches a glimpse of the little sora rail dodging through the reeds and rushes.

One could write a book about this beautiful marsh, and it would require to be in four volumes, one for each season. The first on the spring, its flowers and migratory birds, the second one in summer, on its resident birds and flora, the third on autumn with its birds returning from the far north and stopping just as long as the ardent hunters, from the lad of twelve with his muzzle-loading musket to the gentleman of society with his £50 Scott, will let them, and the last on winter with its muskrats and occasional birds. Each season finds me there, looking for my friends, and when in spring the thoughtless boys set fire to the marsh, as they always do, again I am there watching the roaring flames devouring everything before them, crackling in volleys as if two hostile armies were engaged in deadly fight, then dying down until one feels that the struggle is over, and the combatants are resting by a thousand camp-fires. At such times the marsh birds fly about distractedly, half in distress half in fascination, doubtless some of them meeting a cruel death.

May 24th, 1902. . . Jimmy McGuire has missed his chance this year, and cannot step up the ladder of fame with "Marsh Owls" as a rung. Yesterday Mr. Edwin Beaupre came across a short eared owl tumbling about in apparent distress on the bobolink stretch. It fluttered its wings, dragged itself along the ground, and in other respects acted as if wounded. It endeavored to lead him in one direction, but he decided to go another, and after searching the bog for some time he saw the female peering at him from beneath a small willow, and when she flushed, the nest was exposed with seven eggs.



NEST AND EGGS OF SHORT EARED OWL.

She was just as ready to play wounded as the male bird, and both made frequent squealings as if in distress.

It was a rare find, and to-day we went to the marsh, when I photographed the eggs, and primitive nest, composed of grass and one or two feathers. Both birds were there, one of them busy eating a mole. Numbers of pellets made up of mice bones and fur gave conclusive evidence of the usefulness of these owls—in fact nearly all of this family should be carefully protected and encouraged. The habit of regurgitating the bones and fur of small animals is a remarkable one, and characteristic of the owls.

When I saw these graceful birds sweeping over the marsh, it suddenly dawned on me that we were old friends. . . . For years I have been watching them, pointing them out to others, and wondering what they were. Forgetting that these birds are not nearly so nocturnal in their habits as many of the owls, I remained in ignorance, as I never chanced to come on them at close quarters.

The mystery is solved, Jimmy McGuire and his "Marsh Owls" are indicated, and still Cataraqui marsh has secrets yet to tell.

May 31st, 1902 . . . The phoebe has returned in spite of the insult offered by the County Council. Evidently she could not exist when separated from her beloved bridge. She has hidden her nest most cleverly, and it will puzzle the boys to find it—I looked long before it came in view. For the birds' sake though, I wish there were three spans left instead of one. Bravo, little phoebe.

DR. CLARKE.

DOWN THE ST. LAWRENCE ON A TIMBER RAFT.

WITH PHOTOGRAPHS BY D. D. CALVIN AND SKETCHES

BY THE WRITER.

WHILE cruising about the river opposite Kingston, where the waters of Lake Ontario first begin to feel the draught of the majestic St. Lawrence, one occasionally sees, off the lower end of Garden Island, the sections of a timber raft being got together preparatory to making the leisurely but interesting journey to far Quebec.

To one who knows anything of the white man's dealings with this romantic river, and who is at all in a mood for reflection, the sight of these rafts naturally calls up visions of the past. Of all the varied craft upon the river to-day, the raft alone carries us back to the first commerce of the western settlers. For the pioneers, timber, lumber and staves were naturally among the first exports. They found an obvious conveyance to market by the St. Lawrence, and experience taught what shape and structure the rafts should take.

Soon the bateaux, or overgrown punts, by which the French Canadian voyageurs brought up the supplies of foreign goods and military stores, were no longer sufficient to take back the bulky products of the land. Then the raft and later the scow were called upon to carry to Montreal or Quebec the grain, flour, potash, or salt provisions from the new settlements.

DOWN THE ST. LAWRENCE ON A TIMBER RAFT. 17

Being interested in all such matters, I had for some time felt a growing desire to enjoy the personal experience of a voyage down the river on one of these rafts. Hence, even at the risk of impairing a valued friendship, I made bold to expose my craving to the president of the Calvin Rafting and Wrecking Company, whose headquarters are at Garden Island.

His generosity, however, was more than equal to the strain. In-



A RAFT PILOT.

stead of being merely granted tolerance as a squatter, I was admitted to all the rights and privileges of a first cabin passenger.

Two of Mr. Calvin's sons accompanied me, additional accommodation was provided for us, and we were abundantly supplied with everything to make the trip enjoyable. True, we lost in this way most of the experience of roughing it incidental to rafting, but we were weak enough to let that pass without a murmur.

We went on board Wednesday evening, July 19th, while the fin-

ishing touches were being put to the work of making our floating island ready for a start.

While we watched the sun making one of his choicest summer partings, the crew were hoisting a sail on our section of the raft to catch a favoring breeze. The tug, which was to be our chief motive power, was still taking on stores at the wharf, so we accomplished the first mile or two in true old-fashioned style.

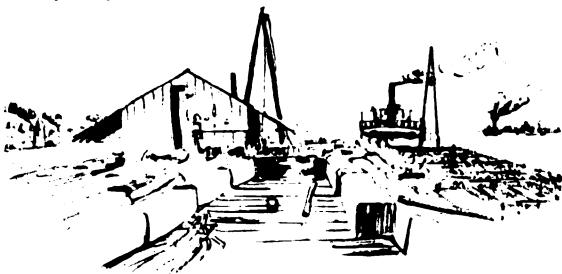
In accordance with the traditions of the raft we kept early hours, retiring as the stars came out and breakfasting while most of the world was yet unconscious.

The first morning, on emerging from our cabin, we found ourselves not far from Clayton, having got forward only some eighteen miles during the night. We were thus in a position to enjoy the beauties of the Thousand Islands during the long day before us. However, the channel being narrower and the current stronger, we passed from Clayton to Alexandria Bay in a shorter time than the progress of the preceding night might suggest.

We spent the morning getting acquainted with the nature and history of our raft and the crew who manned it.

The raft itself was made up of four independent sections, called drams, lashed together two abreast. These drams are separated before going down the rapids, which are taken in three sections; first, the Long Sault; second, the Coteau, Cedars and Cascades; and third, the Lachine.

The greater part of the timber taken down by the Calvin Company consists of square oak from such far away regions as Ohio, Kentucky and West Virginia. From these places it is brought by rail to Toledo on Lake Erie, and thence in the holds of vessels, to Garden Island, where it is made up into drams. Square pine timber from various parts of Canada and the United States, is also rafted. The oak is commonly so heavy that drams made up of it alone would scarcely float, hence a few pine timbers are included in each to increase the buoyancy.



ON THE RAFT.

In forming the drams the timbers are securely bound together by withes, or saplings, after a simple yet ingenious fashion. Experience has shown that this method gives at once great firmness and elasticity, enabling the drams to bear the severe strain of the rapids much better than if bound by cables of iron or hemp.

Our raft was made up of one pine and three oak drams. The pine dram was unusually large, being composed of three tiers of timber, the upper one completely above water. Upon this the cabins were set up and were thus secure from the inundations to which the single layer oak drams are liable. As the upper timbers were large and free from bindings they afforded an excellent promenade.

The crew of the raft were all French Canadians. The navigation of the St. Lawrence, in all its older forms, is almost the hereditary right of the French Canadian. For more than two centuries, as fur trader, voyageur, bateaman, raftsman and lumberman, he has coursed the great river and all its tributaries, and still he follows its waters even through regions where an alien race has long occupied the land.

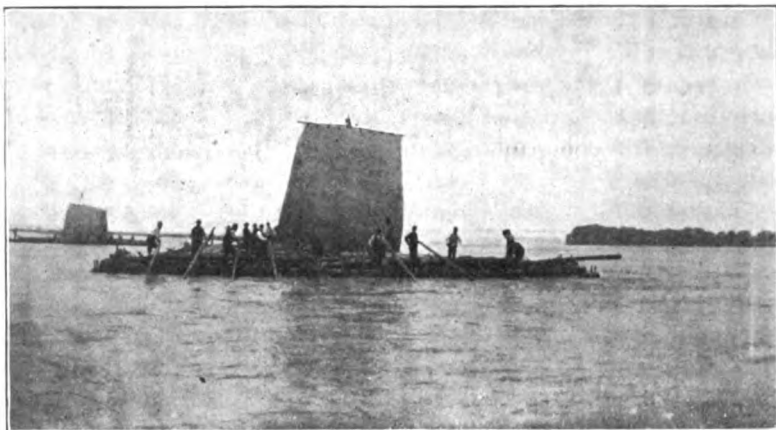
The cheerful, careless, kindly spirit of the French Canadian makes him a pleasant associate. Under excitement his flow of language, prodigality of gesture, and general dramatic extravagance are quite entertaining, at least within limits. In the more serious concerns of life his lack of enterprise, his easy conscience and optimistic conservatism which tends to accept whatever was as right, often cause him to be regarded as a backward citizen. But these defects are not felt on a raft; they may, indeed, even be virtues there, hence we found our crew much more to our liking than a similar grade of Anglo Saxon would have been.

The foreman of the raft was particularly interesting. While a most faithful and efficient servant of the company, he had in a marked degree the Frenchman's dramatic instinct and thirst for glory. He magnified his office most mightily, and even his trivial actions were redeemed from the commonplace. The crew seemed to relish the excitement which he imparted to every task of the least importance, as it gave zest to the work. His violence and meledictions, however, they treated with a cheerful indifference which proclaimed their harmlessness.

We had one deck passenger in the shape of a young calf, of somewhat aristocratic lineage, which one of our Frenchmen with exceptional enterprise, was taking down to his farm near Laprairie. To us his chief beauty lay in his large, liquid, dreamy eyes, looking into whose calm depths one quite appreciated the Homeric compliment to Juno.

For the calf himself, however, his voice was evidently his besetting vanity. Sometimes he used it to beguile his own lonesomeness. This was rather annoying when he was troubled with insomnia, as was the case the second night of the trip. At other times he exchanged compliments at long range with his kindred on shore. In this he exhibited no national prejudice, hailing Canadians and Americans with equal cordiality. Occasionally he was useful in responding, on behalf of the raft, to the salutes of the steam whistles of the river craft, or the tin horns of idle campers on the islands and shores.

Having made ourselves acquainted with our surroundings, we settled down to enjoy the scenery of the river, while the crew were



READY FOR THE RAPIDS.

occupied in erecting bipped masts on the other drams and making ready the sails for any favoring wind. But we were fated to reach Quebec without any aid from that quarter.

A range of rowlocks had also to be set up at each end of the drams and the great spruce oars, or sweeps, about eighteen feet long, placed in readiness for use in the rapids. Stages were next to be built on each of the oak drams as a refuge for the men when, as sometimes happens, the dram is partially or wholly engulfed by the force of the whirlpools and undercurrents in the rapids. Our worthy foreman, in explaining the need of these structures, recounted with dramatic setting the loss of several unfortunate raftsmen, who in former times had been snatched from the drams and whirled off to death in the wild waters.

We entered upon the most frequented part of the Thousand Islands so early that few were yet astir, but as the day wore on the

holiday population swarmed forth, and by the time we passed Alexandria Bay the pleasure seekers were abroad in all their glory. Before we reached Brockville and the evening lights, we had received several visits from friends and strangers, and had been bagged by various novelty hunters armed with cameras.

When left to ourselves we speculated on the location of the most famous of the Indian haunts upon the upper St. Lawrence, the island, or islands of Otondiata, situated somewhere between Brockville and Alexandria Bay. Here was the great resting place and base of supplies for the Iroquois of Northern New York on their hunting expeditions. They reached the St. Lawrence by way of the Oswegatche river, and left it again by way of the Gananoque for the northern hunting grounds of the Rideau Lakes and the tributaries of the Ottawa.

In the large stretches of shallow water eels were to be had in prodigious numbers. Deer were also to be found upon the islands, and easily killed from canoes as they sought escape by swimming to the mainland. To prepare the flesh for indefinite keeping, by smoking and desiccating it on grills over fire, occupied considerable time. Hence, during the season of navigation, as all the early French chronicles report, the islands in this part of the river were seldom free from bands of Indians. In times of active hostility between the French and the Iroquois, careless voyageurs were sometimes ambushed here in passing between Montreal and Fort Frontenac.

No two independent records give Otondiata quite the same location. Some make it one island, some a group of islands, and some a place on the northern shore. Probably to the Indians it was no definite spot, but any place in the neighborhood of the eel fishery or deer haunts where they found it convenient to camp.

As the rafts do not risk even the milder rapids by night, we came to anchor some miles below Ogdensburg, and waited for daylight. While there we were awakened and entertained by a terrible thunder storm. The jagged lightning streaked from the clouds on either side in alternate discharges, while the incessant thunder gave the impression that the whole neighborhood was being ripped up and banged about with the most wanton violence. We were not surprised, therefore, to find that three barns near by had been struck and burned during the night.

Early in the morning we passed the Gallops rapids, and later the Rapide Plat, with a couple of minor ones between. Beyond enjoying the unwonted swiftness with which the ponderous rapt swept down the river and swayed about in response to the changing direc-

tion of the current, there was not much to contrast with the previous calm of our journey.

When we had passed Chrysler's Island and the farm of that name, whose memory is greener in Canada than over the river, our tug began to whistle at short intervals, and soon out from the shore at different points shot numerous skiffs singly and in groups. Here a wife brought her husband, there a boy his father. Before long we had quite a company on board, some twenty-four new comers being added to the regular crew of ten. These were the men who were to steer the separate drams down the Long Sault Rapids.



LAST DIP ON THE COTEAU.

We were not very favorably impressed by the appearance of the newcomers, who, with a few exceptions, seemed quite persuaded that all labor is but vanity and vexation of spirit, that in much wisdom there is much grief, and that therefore both labor and wisdom are to be avoided. Fortunately the Long Sault, though an extensive, is not a very dangerous rapid, nor one calling for specially prompt and vigorous action.

The channel taken by the rafts is quite distinct, for the most part, from that followed by the steamers, being altogether on the American side of the river and separated from the other by Croyl's and the Long Sault islands. It is a narrow and winding channel with high banks most picturesquely wooded. Instead of making the descent in one long sweep, as in the north channel, the water passes

down a series of short rapids alternating with swift but quieter stretches.

While still a couple of miles above the entrance to the south channel, the raftsmen began to cut the drams loose and drop them astern, one by one, at sufficient distances from each other to prevent their fouling on the way down. Finally our dram cast off the tow line, and the tug, taking the norrrth channel, was soon lost to view. The men took their positions at the oars, arranged at the ends of the dram, their functions being, under the directions of the pilot, to keep it even and in the proper channel. They rowed across the current, forcing the dram towards this or that shore as required.

Taking our positions near the front of the dram, nothing obstructed our view, and being but a couple of feet above the level of the water, we had a realizing sense of being in the very midst of the rapids.

The sensation of going down hill with a great body of seething, striving water is altogether unique. The great timbers, hitherto dead and firm as the earth itself, began to creak and tremble; soon they were rising, falling, and swaying about beneath one's feet. As the dram bends in answer to the heaving and sinking sweeps of the rapids, the motion imparted is like that of some great caterpillar hastening along.

There is nothing alarming in the experience. One has simply an absorbing consciousness of being in the very midst of overwhelming forces, with a consequent sense of exhilaration and power, as though one were somehow sharing with Nature in this prodigal outburst of energy. Contrary to common expectation the force of the rapids is not expressed in surface waves like those produced by the external action of the wind on lake or sea, hence the general disappointment of those who view the rapids from the deck of a steamer. The thrilling effect of the rapids is got from a vivid realization of the overwhelming onrush of an immense volume of water every drop of which is filled with energy. Like some other things in the universe the rapids are usually most impressive when least demonstrative. For the same reason they are about as easily pictured as an earthquake.

While this is the impression produced by the rapids in general, each one has its own special characteristics, and the series of new features is so admirably arranged that the novelty and interest are maintained to the end.

Several times, in running the Long Sault, it appeared as though our dram must certainly run aground at some of the sharp turns.

But we swung clear so often that I at length concluded that however languid and feeble the stroke of our supernumeraries might appear, they probably knew their business quite thoroughly, and might even be artistic experts in thus closely cutting the corners.

Having threaded the beautiful southern channel we ran out into that taken by the steamers through the breakers at the foot of the main pitch. We safely crossed, at the next bend, the great whirlpool which in the past has claimed its victims by engulfing part of a dram. On emerging upon a calmer stretch below the famous Barnhardt's island, we found our tug, in company with another, waiting



THE LACHINE.

to assist in diverting the drams to the northern channel, the usual one to the south of Cornwall island not being passable owing to the collapse of the railway bridge there.

Having been towed around a shoal which occupies the middle of the river, our dram was left to maintain its course by the exertions of the rowers, while the steamer returned to assist the others. Here again it seemed inevitable, from the indolence of the crew, that we should miss our course and be drawn off to the south. But by an extra spurt while we balanced at the parting of the ways we slowly swung into the north channel and were safe. Again I suffered self-reproof for lack of faith.

However, when we were almost through the last rapid and were rounding the lower turn opposite Cornwall, the dram seemed to be once more making for the point. Again I watched, now with more

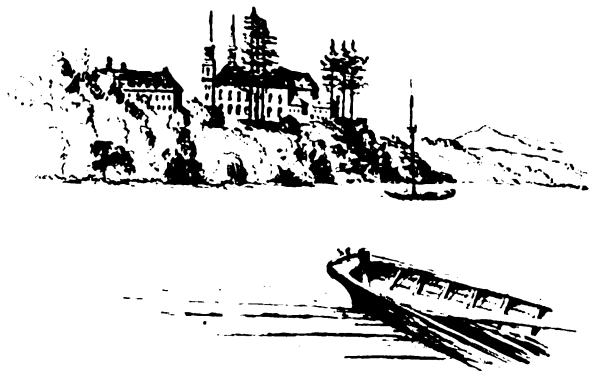
confidence, to see the unexpected happen and the raft swing past the point without a scratch. The crew were rowing with their usual conservation of energy, interested only in propounding the most original theories as to how the caterpillars, which were very numerous in the neighborhood, managed to get across to the islands in the middle of the rapids. One man had a dim recollection of having heard that they flew across. This, however, was voted sheer nonsense, for who had ever seen such a monstrosity as a caterpillar with wings; the launcher of this hypothesis not being able to support it by either argument or evidence it fell through and more plausible theories were canvassed. But the discussion was suddenly interrupted by a rumbling and grinding under the shore side of the dram, and in a few seconds the whole front corner of it was driven up on the bank, and there we stuck fast. Slowly the other end swung round into the current, bending the massive dram into a crescent. Just when it seemed that the binding must give way and the timbers be torn asunder, the beached portion was dragged off again more quickly than it had been forced on, and away we sped out into the middle of the river. But the whirl which we had got sent the other end of the dram in shore, and despite the efforts of the now thoroughly alarmed crew, up it went on the stones and boulders and the same scene was repeated, the whole dram squirming under the strain. Having rounded the point and got into slower water the swing was checked, and we were thankful to find that, though very much like a new moon in shape, our dram had lost not a stick nor apparently burst a withe.

Fortunately for the peace of the raft the foreman was not on our section when the accident happened. But when he arrived on the tug, with the last dram in tow, we had a torrent of wild French Canadian epithets, though his English efforts were limited to "Sacre! No good!" uttered with tone and gesture of infinite disgust.

The other drams had come through safely, though their crews were pretty well drenched. When the supernumeraries were paid off and put ashore, their departure being attended with "no sadness of farewell," the drams were once more lashed together into one raft, preparatory to crossing Lake St. Francis. Our new moon, however, no longer assorted well with the other drams, and we sat down to lunch with our foreman in a very bad humor.

We exchanged tugs here, the one which brought us from Garden Island returning thither, and the other, which had met us here, becoming our escort to Quebec. The foreman, catching sight of the parting steamer waving us farewell, was seized with a brilliant idea.

Out he rushed, knife and fork in hand, and shouted a few directions to the captain of the tug. The captain swung his boat around to get position and momentum, then came at us head on, striking our bulging dram fairly in the centre and driving it hard against the others, restoring at one stroke the normal form of the raft and the good humor of the foreman.



GRONDINES.

The excitement and bustle of the first stretch of rapids being over, a great calm fell upon everything as slowly we threaded our way among the islands which lie at the entrance to Lake St. Francis. Here the daily passenger steamer, which had left Kingston that morning and would reach Montreal that evening, rushed past us, her decks crowded with summer tourists, who doubtless little suspected that anyone had selected that timber tortoise as a conveyance to Quebec.

There being no sensible current in the lake, and being favored with an adverse wind, we got forward but slowly, and when the sun had left us to the lesser lights of water and sky, we were scarcely half way down the lake. After taking the evening air in a quiet stroll on the promenade deck, we retired early as usual, expecting an exciting day on the morrow.

In this we were not deceived, for at an abnormally early hour, even for a raft, we were awakened by what appeared, at first sound, to be a terrible row between two infuriated mobs. With a vague sense that something frightful was in progress we hastened out partially dressed. There was a cold, misty drizzle in the air, and scattered about in it were from twenty to thirty strangers, evidently French Canadians. They were calm enough for the most part, though following with keen, yet impersonal interest, a highly dramatic performance in full cry on the forward deck. There, rushing

up and down on parallel sticks of timber a couple of yards apart, were our worthy foreman and a fellow countryman in the throes of unquenchable rage. They were launching at each other the most extravagant and menacing gestures, accompanied by language of equal vehemence, yet most of it, one painfully observed, of the most unedifying character. A few others joined in from time to time, rendering fairly effective support and maintaining the interest. Though already far beyond the bloodshed stage of an Anglo Saxon quarrel, it was evident that the heat of the encounter waxed and waned with the interest of the spectators, quite independently of the merits of the matter at issue, whatever it might be. Hence, when the interest of the audience weakened and the dramatic effect declined, the chief actors and their assistants lost heart in the performance and it shortly collapsed. Half an hour later these heavy tragedians were walking up and down in the friendliest conference. It turned out that this prodigious display of wrath was occasioned by the cutting of a few feet of rope instead of untying it.

The newcomers were the special crew for the second section of the rapids, the Coteau, Cedars and Cascades, making the descent from Lake St. Francis to Lake St. Louis.

By the time the drams had been separated, the tug dismissed and we were leading the way into the current just above the Coteau bridge, the drizzle had ceased and the fog had been elevated to the dignity of fleecy clouds which mellowed the fierce sunlight and af-



THE BRICK KILNS.

forded perfect conditions for viewing the rapids. Approaching, from the lake, the straggling maze of islands and channels, the river has the appearance of having but lately broken bounds, to find its way down the long slope as best it can. Falling into various channels a group of islands is formed, and as these are not accessible for any ordinary purposes, they are left to nature's artistic planting, being charmingly fresh and beautiful.

One is constantly impressed in passing down the St. Lawrence, with a sense of the river's newness. The various lakes, islands and rapids, not to mention the numerous rocks and shoals, all suggest that this great body of water has not always found an outlet by the present route. Were this river as old as the other great streams of the world, the barriers would probably have been cut through by deep channels, the lakes greatly narrowed, and the waters confined to a single bed of more uniform descent. Another interesting result of the present condition of this waterway is that, since the great lakes neutralize the floods of spring and the droughths of summer, the upper St. Lawrence is unique among large rivers in having a remarkably uniform level. This permits vegetation to flourish down to the river brink thus greatly adding to its beauty.

On passing the bridge we were fairly in the rapids once more. Again we took an independent course, this time following the northern channel, while the steamers take the centre one separated from ours by the beautifully wooded French island. Gathering speed every moment we drifted straight upon the middle of the island, and as we neared it we found ourselves riding a broad ridge of water which fell away on either hand. The ridge culminated, off the head of the island, in a triangular bank of water considerably higher than the rest of the river, but lying almost motionless, eternally uncertain which direction to take. The rowers deciding the matter for our dram, we passed to the north.

I had been wondering why we were following the ridge so closely instead of keeping well over into the northern channel. But now that our course was decided my astonishment increased, for instead of giving the rocky shore of the island a wide berth the rowers were strenuously urging the dram towards it. Further down the rapid the island pushed a shoulder out into the current down round which the water swept in a long, glossy curve. Straight upon this shoulder we were undoubtedly driving. My faith in the wisdom of the crew was not very robust since the experience of yesterday, and I instinctively held my breath for the crash which was visibly coming. But, just at the last moment, round swung the end of the dram, thrust off by that great fending curve. Though close enough to the point to have almost jumped ashore, by we swept without a scratch. Yet this was no exhibition of skill intended merely to excite the terror and admiration of the ignorant onlooker. The current was so strongly deflected from the shoulder of the island that it set heavily towards the other shore where it broke among shallows and rocks. Hence the object had been to pierce the current before it had carried the dram too far across the channel.

DOWN THE ST. LAWRENCE ON A TIMBER RAFT. 29

Safely through this experience, we had a little respite before taking the heaviest pitch of the rapid between Prisoner's Island and a point on the north shore where stood the old Coteau fort. Coming out of the breakers at the foot of this descent, we had a strong but quiet current down a beautiful stretch of the river to the village of Cedars.

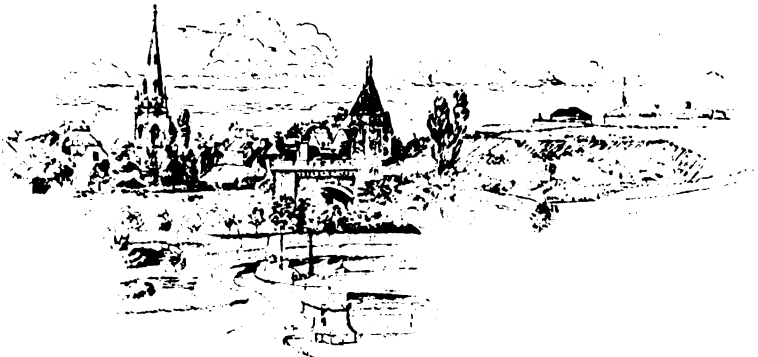
Over the bank to the north we could spy, from time to time, the outward and visible signs of that great undertaking of the Canadian Government, the Soulanges canal, which is to overcome all these rapids and furnish the last link in a fourteen foot waterway from the upper lakes to the sea. By permitting the timber vessels to carry their cargoes through to Quebec, it will likely end the rafting business. Then one more link with the past will be broken, and this romantic occupation become but a memory.



BELOW POINT PLATON.

In passing the Coteau Rapids we had discovered that our special crew of French Canadians were a great improvement, in point of skill and vigor, upon their Anglo-Saxon representatives of the Long Sault. This was all the more striking because, now that we had passed into French Canadian territory, there was everywhere evidence of the lack of ambition and enterprise such as are manifest in the upper province. On inquiry and reflection it appeared that the very enterprise of the English settlements made it impossible to get men of any vim or capacity to supply such an irregular need as that for special rafting crews on the rapids, hence only the indolent and incapable were to be had. In the French Canadian settlements, on the contrary, owing to the more backward condition of the country, and the fewer opportunities for steady work, there are dozens of very good men to be had for temporary employment, especially at such tempting remuneration, for a French Canadian, as two and a half to three dollars for half a day's work.

In going down the Cedar Rapids we again took the north channel, the river as usual being broken by islands of great natural beauty. The passage of the Cedars is in some ways the most thrilling experience on the river. The raft channel contains the greater volume of water, the descent is quite steep, and, owing to the obstructions in the river, the cross currents, whirlpools and general strife of forces are intense. The French Canadians evidently take the Cedars quite seriously. For a mile or so above the main rapid several of those on our dram spent every interval in the rowing on their knees in earnest devotions. Under the circumstances the sight was rather impressive, and calculated to prepare the mind of the novice for something unusual. This tribute of respect was not paid to the dangers of the other two rapids in the series. Beyond the Titanic war of forces here displayed, the special feature of the Cedars is



ST. LOUIS GATE, QUEBEC.

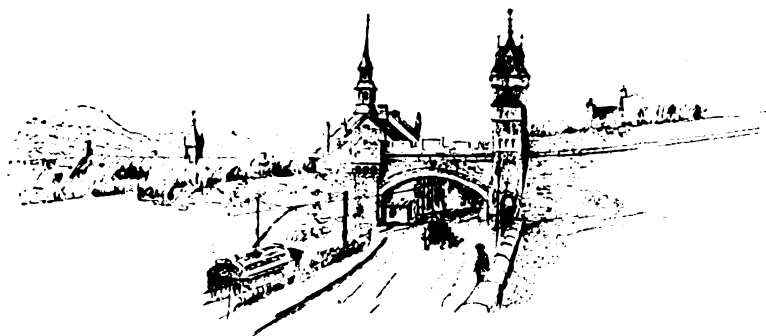
that the dram twice turns end for end in going down them. This is due to the powerful cross currents which run there. Right in the middle of the first pitch is a great rock rising almost to the surface of the water. Just at this point the dram takes its first whirl and the corner sometimes strikes on the rock thus hastening the turn. Should the dram run fairly on the rock, as has happened, destruction is certain. This turn brings the dram round to the left of Isle aux Quacks, after which it takes another whirl in passing sharply to the right, and finally dashes through the breakers at the junction of the two channels, in its original position.

Again we have an interval of quieter water before we run the Cascades. But we are getting used to rapids now, and these having few special features we take them calmly. In the middle of the rapid a special outburst on the surface marks the spot where an iron steamer lies on the rocks below, having gone down there some years ago.

We saw our second batch of supernumeraries leave us in one of the few remaining examples of the old river bateaux, with sharp bow, square stern, straight sides and flat bottom, easily carrying thirty men.

While getting the raft put together again we were just where the currents of the Ottawa and the St. Lawrence rub shoulders for the first time. The sparkling blue waters of the St. Lawrence and the dark brown stream of the Ottawa as yet hold strictly aloof from each other. But gradually growing familiar in their leisurely flow through lake St. Louis, the last traces of reserve vanish in the wild rush of the Lachine. Thenceforth the St. Lawrence is no longer the beautiful clear river which shoots from the Cascades.

Slowly making our way down lake St. Louis after lunch, we had time to reflect on the experiences of the morning and on the in-



KENT GATE, QUEBEC.

fluence of these rapids on history. After passing this series of rapids at the very entrance to the upper St. Lawrence, one can understand why the French so long found these obstructions, re-enforced by the Iroquois, so complete a barrier to the west by that route. Until the latter part of the seventeenth century, Lake Superior was more accessible and better known to them than Lake Ontario. The importance of the St. Lawrence route was, however, fully appreciated, and at length the wisdom of Talon and the enterprise of de Courcelles overcame all obstacles and proved alike to French Canadians, Indians and New York heretics, the possibility of the French holding the keys of lakes Ontario and Erie.

The French have long been noted for their assurance and success in diplomacy. Indeed, notwithstanding their brilliant achievements in arms, diplomacy has usually been the better part of French valor, augmenting every victory, and effectively minimizing the natural consequences of many a defeat. Their courage and enterprise

in this direction were not always limited to making the best of both allies and rivals among earthly powers. They even sought to beguile Providence itself, and from time to time tempting offers of alliance were dangled before the face of Heaven. Many such diplomatic overtures are to be found in the state papers relating to French Canada. In connection with this very matter of opening the upper St. Lawrence route, we find Talon, in 1665, naively pointing out to Colbert the great advantages which would result to God and the French king, to the former for His glory and to the latter for his power, in a joint enterprise for opening up the St. Lawrence route to the west, hitherto closed by the difficulty of overcoming at once the rapids and the Iroquois who sat by them.

Nor were there wanting many satisfactory proofs of success in such aspiring diplomacy. To stimulate and assist the Jesuits and Sulpicians in visiting distant tribes and carrying French gospel among the savages, was the chief contribution to the common cause on the part of the King. In the strong influence which the preaching of the missionaries had in bringing the Indians under the control of the French, the king's ministers professed to recognize the answering favor of Heaven. At the same time certain disastrous reverses called for the recognition of the counter influence of Satan. Allying himself with the English and Dutch heretics, the natural enemies of God and man, they jointly appealed, too often with success, to the sordid side of the savage nature, seducing them by means of cheap goods, including rum, and high prices for furs.

But those days are far past. The Indian no longer makes history, though what is left of him still clings to the St. Lawrence and exhibits his hereditary skill in river craft by navigating the rafts down the last and most dangerous of the rapids, the Lachine.

While still a long way off, the Indians of Caughnawaga spied our coming, and soon a motley collection of skiffs, with sails still more varied in shape and color, bore down upon us. Within an hour the raft had received some fifty Caughnawagans. They are called Indians, and doubtless there is a basal strain of Indian in them all; but it looks out upon the world in this generation through such a variety of European masks that the results are truly marvellous. Such a museum of facial expressions I had never seen, and I at once prepared to secure a few sketches. They seemed however to have inherited something of the primitive savage's suspicion of image drawing, as savoring of magic and the evil eye, hence they could only be taken unawares, and one or two of the most interesting escaped altogether.



The pilot of our dram appeared to be the most thoroughbred Indian of the lot, and a very pleasant, intelligent fellow he was. Our respect and admiration for him was greatly increased on seeing his conduct of the dram in running the rapids. Scarce a word did he utter, but in a quiet dignified manner that inspired the utmost confidence, he directed his men with a few motions of his hand, and the vigor and unanimity of their response were most admirable. They pulled together as one man, and with such a will that one could feel the dram answer to the thrust. It was all needed too, for the characteristics of the Lachine Rapids are, a single channel, the navigable



parts of which at the critical points are quite narrow, with ugly rocks on either hand, sharp turns, steep pitches, strong whirlpools and undercurrents.

We anchored at Montreal for the evening, and went ashore while the tug was taking on coal and provisions. By daylight we were off for Quebec, with a diminished crew, the raft henceforth requiring but little attention.

We were now thoroughly into French Canada, and for the rest of our journey we enjoyed the prevailing calm of that province. Those weary souls who abhor the storm and stress of modern busi-



CAUGHNAWAGA INDIANS.

ness and social life, should certainly seek the mediaeval repose of French Canada. There time is not of the essence of things, and beyond an instinctive craving for that earthly haven of rest, the civil service, the people suffer little from goading ambition. In the French villages, whose modest houses are strung like beads along the river roads, there is almost a socialists' paradise of equality and simplicity. Few excite the envy of their neighbors by becoming rich, building fine houses, planting beautiful grounds, or otherwise indulging in invidious luxuries. Only the parish churches and religious houses, in whose glittering splendor all have a share, stand out in marked contrast to the other buildings, thereby augmenting their special influence upon the French Canadian mind.

Everything that the eye meets on the lower St. Lawrence speaks of the past and invites to reverie. The river itself, with its broad stretches and well peopled shores of low or moderate height backed by a modest range of dark blue mountains, always wears an air of dignity. When under its influence one quite understands why Frontenac, the most imperial representative of the grandest monarch of France, should have sent an urgent appeal to the king to be furnished with a state barge for his official journeys, complaining that it was impossible to maintain any befitting dignity in a canoe.

The close of the first day from Montreal left us in the midst of lake St. Peter, and the second night found us barely holding our own against a flowing tide some thirty miles above Quebec. Our days were drifting idleness, and the passing panorama kept our spirits steeped in a long historic dream. The present, with its local unobtrusiveness, gave way to a procession of varied scenes filled with persons and events of the past three centuries. These naturally culminated in Quebec, where, however, the present, with its crowd of bustling tourists, is more self-assertive, refusing to be quite ignored even in the presence of the most imposing throng of old French memories.

But we have left our raft up at Sillery to be dissolved into its constituent timbers, for which several ocean freighters are already waiting.

ADAM SHORR.

THE JOHANNINE THEOLOGY.

THE Johannine Theology is the culminating point of new Testament reflection on the meaning of the life and death of Jesus. That life and death were felt from the beginning, by those who came into real and sympathetic contact with them, to have a supreme and unique significance. The deepest questions found their answers there. But of course the form of the questions varied with the questioner—according to his nationality, temperament, training, manner of thought—and as the questions varied, so did the answers found to them in the many-sided light of that inexhaustible Personality. The time was when people thought that, in the primitive Church, an absolute uniformity of view prevailed on all points of faith and doctrine. The great service performed by criticism, and especially by the Tübingen school, though, no doubt, in the first heady ardours of discovery, they ran into many excesses and mistakes, was to break up this dogmatic illusion of a dead uniformity, and to restore to full view the spectacle of growing, manifold, divergent and even conflicting life which, as we might have expected, turns out to have asserted its inextinguishable forces then, as ever since in the history of the Church. No doubt a deep fundamental unity of spirit binds all the New Testament writers together. But our grasp of this common truth is weakened, not strengthened, by ignoring the rich variety of forms in which they have severally given expression to it. The best way, therefore, I think, to suggest in a brief sketch the meaning of the Johannine writings, (from which in the meantime I exclude the Apocalypse, as being on any view of its authorship in a different category from the Gospels and Epistles so far as its Theology is concerned) is by shortly indicating their place in the development of New Testament thought.

The first disciples of Jesus were Jews. They regarded their Master as the Jewish Messiah. However profoundly and fruitfully their thoughts of this Messiah and of the Kingdom which he had come to found, were modified by their intercourse with their Master in life, and their separation from him by his death on the cross, they still continued to be Jews. What they had hoped would happen in his life, the restoration of the Kingdom of Israel, was only postponed, not at first very radically transformed. They still continued to look forward to a day in the not very distant future, when their Lord should return in power and establish a universal dominion, almost indistinguishable at last, in their explicit presentations of it, from the new Jerusalem which ordinary Jews also expected their Messiah

to bring down one day from the heaven where it lay in store awaiting the hour of its unveiling. The followers of the Nazarene differed at first from the pious Isrealites with whom they prayed in the temple, mainly, so far as they could have named the difference, in believing that the Messiah had already appeared, had been crucified, had risen again, and would soon return. Their work in the meantime was to bring their countrymen to accept him, while yet there was time. When persecution in Jerusalem, provoked, it is to be noticed, by the Hellenistic Jews among them, drove the new doctrine to push its propaganda outside the sacred bounds of Israel, they insisted on making their Gentile converts Jews first, before they would recognize them as brothers in Christ. An uncircumcised follower of their Messiah was to them a contradiction in terms.

Such was the first phase of the faith of Jesus Christ, dominated by the view of him as the Messiah of the Jews. It was faithful in a literal way to the external facts of our Lord's earthly appearance; could point to the letter of his own example. He had been sent to the lost sheep in the house of Israel, in the first place. Like all men truly great, he had found an infinitude in the task nearest to him. That had filled his horizon. The field was limited, though the seed he sowed in it knew no limits, but would grow in any soil. The universality of his thought was not in the sphere of its actual application, but in the boundless wealth of its content and in its potential applicability. Though he had spoken to Jews not as Jews but as men, and though the essential meaning of his words and life transcended by their very nature all superficial boundaries and pressed forward to their true address in the universal heart of man, still he had, as a matter of literal fact, confined his mission to Israel and had not given his disciples any injunctions which they understood, to pass beyond the outward limits of his own activity. It was not strange then (considering the enormous difficulty which men have in all ages in piercing through the letter to the spirit) that his immediate followers, with their eyes fixed on the mere outside of the facts and their minds very dimly open to the fullness of their real meaning, should have failed at first, until they were tardily and reluctantly enlightened by the compulsion of events, to see the logical consequence of their faith in the Crucified Messiah. They thought they could be both Jews and Christians. They did not realize that Christianity was a new faith essentially incompatible with their legalism and not a mere variety of it.

To make a clear separation, it needed a man free from their entangling privileges; a man who, not gradually and insensibly, but

through sharp conflict and with an intense feeling of the precipitous antithesis between the law and the Christ burnt into his soul, had become a follower of the Crucified. It was Paul, the Pharisee, who took the great step of definitely disengaging, in principle, the new religion from the swaddling bands of its infancy; who rose to the thought of a spiritual and universal Christianity. His was the crucial achievement, indispensable for all future growth, and needing what mighty force! what incalculable expenditure of spirit! and his name must ever remain the greatest in the history of the Christian Church after the name of his Master. To him, Jesus was not the Messiah of the Jews, and of Jewish proselytes of the gate, but the Saviour of the whole human race. Salvation is a purely inward process involving a change of the man as such, and therefore to be attained on exactly the same terms both by Jews and Gentiles. It is to be received by faith, that is by a living union with the death and resurrection of Jesus Christ. The Christ is doubtless the Messiah, but he is a great deal more. He is the head of the entire race; God's own son in a higher than the old Theocratic sense; the man from heaven; the ideal man; man as he was in the beginning in God's own thought; the representative of the normal relation between God and man; of that deeper life of oneness with the Father, where all superficial differences disappear, into which all men alike must enter by dying with him to the flesh, that is not only to sin but to the whole merely natural and immediate side of their life, the inherited rituals and natural customs which separated them included.

The saving efficacy of the Christ's manifestation in the world is entirely concentrated by Paul about the death on the cross and rising again. This death is thought of in two aspects, one belonging more, it would seem, to the outward body of the Apostle's imagery, which represents it in forensic forms as an objective atonement for man's guilt; the other, more adequate to the essence of his deep mystic intuitions, where it is the symbol of the process by which the actual sinful man passes from his natural condition of discord with God and with the inarticulate movements of his own higher nature, into a state of harmony and reconciliation. The early life of Jesus is in Paul's interpretation of him referred to a very subordinate place. The "Christ according to the flesh," was precisely what he had to combat throughout his career. The mere external facts and limits of the ministry of Jesus, the authority of the twelve resting on indubitable experiences of sense, on personal intercourse with the Master, and on their direct and audible commission at his hands, were the main stronghold of his Judaizing opponents. Who was Paul? said they. What evidence could he produce that he was empowered

to speak in the name of Jesus whom he had never seen? Paul's evidence was drawn from a region inaccessible then as now to literalists, from the "Christ according to the spirit." That was what he seized upon—the inner ideal purport of Jesus' appearance to the whole world disentangled from the local and temporary accidents of its outward scene. In comparison with that "the flesh," in which the Christ was manifested, sank into insignificance. It was but the badge of his momentary humiliation; an inadequate and obstructing form in which his glory was as it were hid for a time, assumed merely that it might be laid aside in his atoning death. He took on flesh merely that he might vanquish and slay the flesh in dying for us. The significance of the flesh was altogether that the assumption of it was the necessary preliminary to the cross, which was at once the lowest abyss of the Christ's "kenosis," emptying of himself, and the necessary portal to that higher and fully adequate form of existence in which he sits enthroned at the right hand of God, an infinite power set free from all eclipsing contents, accessible to all men and able to give them untrammelled access to the Universal Father. Thus the watch words of Paul's system by which he broke down the middle wall of partition, the barriers of Judaism, and liberated Christianity as a world religion were the "new Adam," "the man from heaven," and "the Christ according to the spirit."

As we might have expected, however, Paul retained many traces of that very Judaism, which it was his great achievement to antiquate and abolish in principle. It was through the law, taken in thorough earnest and vitally traversed to its full logical conclusions, that he reached the Gospel. Had he not been such an uncompromising Pharisee, he could not have become the first full-fledged Christian. It was, then, from the law itself that he derived the weapons with which he overthrew the law. He turned the Rabbinical dialectics with deadly effect against the Rabbinical religion. Hence, though the substance of his thoughts rises to the clearest heights, the form of it often remains hard and repellent, the toughest rind of Judaism. A thoroughly Pharisaic and external view of the relations between God and man as creditor and debtor is his point of departure, his setting forth of the problem; and the solution of the knot, the payment of man's debt in the sacrificial death of Christ is often presented by him in words, which, taken as they too often have been, in isolation from other passages, wherein, as I think, his real and deeper meaning is expressed, suggest and have formed the basis of a singularly mechanical and legal theory of the process of salvation. His energetic antithesis of law and grace, faith and works forced upon him by the exigencies of his life-long controversy, and in reality

full of permanent and deep truth, was from the first and has often since been used, in spite of his vigorous protests, in a sense subversive of all sound morality, and as a cloak for the most un-Pauline sensuality and shiftlessness. His eschatology, though showing a marked tendency of growth towards the more spiritual conceptions which alone were in real harmony with the leading principles of his own thinking, remained largely Jewish in its imagery. The Rabbinical categories into which his ideas are run, were difficult of comprehension precisely in those Hellenic communities founded by himself. In the very next generation, as we see in Clement of Rome, those who quoted him most, and believed themselves to be most distinctively of his school, quite failed to understand him, and were the most ready in perfect good faith to drop back again into that very externalism and officialism most abhorrent to his way of thinking. Finally, we have already seen how scantily represented in his system was what has proved to be the most powerful and universally attractive element in the Christian Religion, the Gospel story of our Lord's earthly life. In spite of Paul's Titanic achievement, the wonderful comprehensiveness and spirituality of his central ideas, the unparalleled sharpness of his insight into the secrets of the natural human heart with its intestine strife and futile aspirations—the *video meliora proboque deteriora sequor*—and the majestic sweep of pinion and penetrating ethereal sweetness which soars and sings in the noble lyric outbursts into which he breaks loose at times from his groaning and creaking logic on the sunlit summits of his thought; in spite of all this, the earthen vessels into which he had to put his divine treasure, have hitherto often counted in Christian Theology for more than the divine content itself. Men have stubbornly attached themselves to his metaphors and lost sight of his ideas. Paul has never been understood by the Paulinists. He has acted more as a ferment in times of revolution than as a formative force. His presentation of Christianity, had it stood alone, would have been very insufficient for the needs of the Church. Something simpler, less entangled in the Jewish past, was needed, something more capable of being readily assimilated by the Hellenic Christians, who were our own spiritual ancestors, and that was provided in the writings of John.

In these we have the spiritualizing process begun by Paul, the recovery and application of the essential teaching and personality of Jesus, carried to the final stage which it reaches in New Testament literature. Paul, as we have seen, used as his liberating ideas, the two great conceptions of the Christ according to the Spirit and the Man from heaven, what we should call the Ideal Man. He did not,

of course, discard the original thought of the Messiah. He translated, as it were, transfigured, and subsumed it under the larger term. If Christ was the Saviour of the whole race, as the manifestation of the Ideal Man, of course he was the Messiah, the Saviour of Israel also. So John too does not discard the Messiah conception. Jesus is he of whom Moses and the prophets wrote. The entire value of Moses and the prophets is that they did write of him. He is the Messiah of the Jews, the only possible Messiah for them. But he is infinitely more than that. He is as with Paul the Divine Saviour of the race. But even this comprehensive category falls short of containing him. If the meaning of man is clear in him, then the meaning of the whole universe must be, since man is the mirror and sum of the universe. Therefore, he is and can be nothing short of the Eternal Word; the indwelling and outflowing reason and speech of God: the principle of God's self-revelation manifested from the beginning in creation, and in the entire course of history. Not man only, but the whole world finds in him both centre and source. God is essentially active, self-revealing. He always works and takes no Sabbath rest. From the moment when the spirit brooded over the waters, and brought an ordered world out of Chaos, up to the forming of man in the divine image, and on ever since through all the ages of God's dealing with the race, one reason and one purpose has been busy in the shaping of visible things, and has been the sole permanent reality underlying their fluctuations and decay. The world is the manifestation, the vesture of spirit which by the inner impulse of its own nature struggles, as it were, towards incarnating itself. In the life of Jesus, this process reaches full visible realization. There the circle is complete: the whole plan of the divine scheme palpably embodied. The universe which flowed out from God returns again to God, in conscious unity of thought and heart and will, the love for the Father of the only-begotten Son whose meat and drink it is to do the Father's will.

That this idea of the Logos was not invented by John everybody admits. It was a current term of the Alexandrian, more specially Philonic philosophy of Religion, derived partly from Greek originals—Plato and the Stoics—partly from the Old Testament where the Word or Wisdom of God plays a considerable part, and shows a decided tendency towards being elevated into an hypostasis, a personality more or less distinct from God himself and capable of relatively independent action. John presupposes acquaintance with the term and that too distinctly, as I think, in the form which Philo has given it. He evidently has an audience to whom it is as significant to say that Jesus was the Logos, as it would have been to say to Palestinian



Jews that he was the Messiah. We know that Ephesus—on any theory of its authorship the place of the fourth Gospel's origin—was a great centre of this Alexandrian school of thought. The exact quantity of John's dependence on Philo is of course a matter of rather burning controversy. I think the question a very subordinate one though archaeologically interesting. Had it not been for John, we should have heard very little about Philo. However many traces of correspondence may be found between the fourth Gospel and Philo's writings—and there is a large number of striking ones—there can be no question that John has completely transformed the idea, in fact practically to a large extent reversed its original tendencies and bearings. He has changed it from a metaphysical formula to an infinitely suggestive religious symbol. Just as with the Messiah notion, the inevitable mould into which Christianity must be cast for Palestinian Jews—summing up as it did for them all their highest religious ideals—so with the characteristic term of Alexandrian Judaism. We must remember that this latter school of Jewish thinking was very wide-spread throughout the heathen world and constantly coming in contact with the earliest missionaries, and that it had come to be recognized by that time as a quite orthodox and normal type. It was just as inevitable and necessary that the new religion should be translated into their familiar language, as that, in the mouth of Paul and Pharisee, it should work with the rubrics of the Rabbinical Theology. John was not the first to address himself to them. Apollos, we are told, and the author of the epistle to the Hebrews, we know, preceded him in the same mission. In Jesus Christ all the former gropings after religious truth found what they had dimly sought for. The proof of the universality of his message was that it could speak in all tongues of thought, as at Pentecost, and change them into tongues of fire, imparting to them a new glow and penetrating power. He realized for every type and school their highest aspirations, which were but prophecies of him. That is John's own teaching. And in realizing them he transfigured them. Just as the Jewish Messiah filled with the inexhaustible content of his life came to be the Saviour of Man; so Philo's Logos in this new fertile element

"Suffers a sea change,
Into something rich and strange."

Even Philo no doubt had aimed in this principle at bridging the infinite distance between man and God. But as the sum of abstract divine ideas rejecting by their nature the very notion of embodiment in finite forms, the Logos with him had ended rather by deepening the gulf of the dualistic separation it was meant to span. John's Lo-

gos, on the contrary, had its root in historic reality: in the life of Jesus and in the power of Jesus manifested in the church since his death. His Logos was before everything and in its genesis the Word of God visibly incarnate in Jesus, and visibly incarnating itself anew in the lives of his followers. Here was a symbol in which, for the religious consciousness at least, the old discord was resolved, and a real way of access to God was gained. John did not reach this way of envisaging his view of Christianity by speculation. He was not a philosopher, but a man of creative religious insight—a God-intoxicated man—one of the phenomena which philosophers have hard work to make their systems wide enough to cover. He did not begin with abstractions. He began with facts; with the overwhelming impression made upon him and on his Church by the Person of Jesus. He tried to answer the question “what is our Lord to us? In him the meaning of ourselves, of the world and of history have become plain to us. In him we have reached inward light and peace, fellowship and union with the Father. Death has only brought him closer to us and unfolded the fullness of his life. He has become the very element and atmosphere in which we have our being.”

“That one Face, far from vanish, rather grows.
Becomes our Universe that feels and knows.”

The only adequate form of words available for him and for his fellows to express the infinite riches of the inward possession they had in their Master was to say of him that he was the Incarnate and Eternal Word of God.

This formula not only answered immediate needs and translated the message of Jesus into a shape much more accessible to the minds of Hellenistic Jews, accustomed to Alexandrian speculation, than the original reference to the Jewish Messiah. It also linked Christianity on to the highest and purest products of Greek culture. It claimed for Jesus the fulfilment of the fair dreams of a noble and harmoniously developed humanity left to the world by the poets and artists and thinkers of Hellas. It might be said to sum up in itself or at least suggest the fruit of the whole travail of the Greek mind which received its final expression in the systems of the philosophers. It recalled memories of Pythagoras, Plato, Heraclitus and the Stoics. The Greeks had been the first to grasp, in any comprehensive and firm way, the thought that things are a Cosmos not a chaos. That conviction, which lay at the root of all they did, finds utterance in their earliest literature—in Homer—and goes on gathering clearness with the centuries. The world is an ordered system. Mind finds itself there and will can mould it. It is an articulate word not an in-

coherent jargon. It has a meaning. "Yes," says John—taking up the most pregnant word which summed up their view of things as the expression of Reason, the word *Logos*—"it has a meaning: its meaning is Jesus Christ." Of what incalculable importance it was that Christianity should thus be naturalized in the open field of the culture which was that of the educated men of that day, as it still is in substance our own. That meant no less than the assertion in germ of its compatibility, nay of its radical identity with the humanistic and scientific view of things. Both science and literature have, no doubt, gone far since then; but I think it may be said that not one single new principle, which would affect the fundamental aspects and relations of man's main interests, has since come to light. But without going quite so far afield, we are at least fully entitled to say that the whole development of Christian speculation, in its first and incomparably greatest period, namely during the first three centuries, was shaped and dominated by the *Logos* doctrine of John. The great Christian Alexandrians, Clement and Origen, men who knew their Greek poets by heart as well as their New Testament, who can still teach us much needed lessons not only in the combination of humanistic and philosophical culture with Christian piety, but also, as a natural consequence of that, in Theological thinking besides, lay enclosed, as it were, in that fertile seed. So did Athanasius, and the triumph against Arianism and pagan dualism of that Nicene creed, which conserved, in the only manner possible at the time, the great central saving truth of Christianity, the union of the divine and human in Jesus Christ.

But we must try to see in more detail, though briefly, what this idea of the Incarnate Word means for John, and how by means of it he is enabled to restore in a clearer and simpler form than even Paul had reached, the heart of his Master's teaching and life.

We may, looking to the past to begin with, say it means in the first place that there never has been more than one religion in the world, variously expressed—the religion of Jesus. That was the one living force and word of power, striving to speak itself, as it were, under all the imperfect forms in which the religious consciousness had found a stammering utterance. Moses and the prophets even must be interpreted from this centre: otherwise they become a savour of death; their only permanent value is just so far as they foreshadow Christ and hold in solution some broken rays of the truth whereof He is the Sun. The light had shone on them but not on them alone: it had illumined "every man who cometh into the world." No doubt the ancient revelation to Israel had a special clearness and purity, more of Christ in it, than the others." "Salvation

is of the Jews"—starts from their religion as its matrix. The Jews "knew" what they worshipped. But the Gentiles also worshipped in their dim way. In the very act of adopting the term which he places in the emphatic position of the very first sentence of his Gospel, John acknowledges, as we have seen, the searchings of the Greeks after wisdom as a prophecy of the Christ.

The whole content, however, of the term Incarnate Word in which this aspect of it and all others converge, is this, that for John the earthly manifestation of Jesus, interpreted and unfolded by His Spirit to the minds of His disciples, is the supreme and complete revelation of God and man. There we have presented before our eyes as in a plastic embodiment, a living symbol, what God is and what man should be. The deepest central secret of that life is union with God—"I and the Father are one"; absolute dependence on Him—"the works which I do are given me of the Father"; and absolute immersion in his will and self-identification with it—"I came not to do my own Will but the Will of Him that sent me." Or, in other words, its deepest secret was love. There is no bitter struggle in the full submission even unto death, or if there be an instinctive human recoil, it is but momentary; love makes the burden light. But love is a divine pain too, which struggles downwards as well as upwards and cannot rest till it gives itself for those who need. The deity of Jesus appears above all in this, that his whole life, as well as his death, was one continuous lavishing of himself for his brothers. John, therefore, refuses to see, with Paul, any "kenosis," emptying of himself in the external lowliness of the Christ's human life. He is nowhere more god-like than when he weeps at the grave of Lazarus, or girds himself to wash his servants' feet, or agonizes in Gethsemane; and the pinnacle of his earthly appearance is the lowest depth of that outward humiliation, the Cross. John's favourite word for this ignominious death is "hypsosis," lifting up; exaltation not humiliation. It is as if he said: the glory is not an external after-reward of the shame; the glory is in the shame; the life in the death. Much more fully and clearly than Paul has he grasped and uttered the paradox of Jesus that he is greatest who is the servant of all. Much more completely has he got rid of that dualism which saw in a mere human life an inadequate vehicle for the manifestation of God. By what might seem at first sight the strange path of metaphysical conceptions and high Christological speculation, John is enabled to restore to its full rights that simple story of Jesus of Nazareth who went about doing good, healing the sick and preaching the good news to the poor, which has been through all ages incomparably the most winning and potent force in Christianity. Among the many anti-

theses solved from his higher vantage-ground and greater distance from the perplexing dust of the early controversy, no solution was of more importance to the life of the Church than that of this antithesis between the Pauline "Christ according to the Spirit" and the Judaisers' "Christ according to the Flesh." The Spirit was fully, not imperfectly revealed in the earthly life of Jesus. No doubt, in John too, the elevation above all local and temporal limits of the Crucified and Risen Lord is distinctly recognized as the unlocking for the benefit of all men of saving forces which had found a very restricted sphere in Palestine. This indeed is, according to him, one main purpose of Christ's death. He gives himself in that supreme act of self-sacrifice that all the world may receive the benefits he bestows. "I, if I be lifted up will draw all men unto me." But the same divine spirit thus liberated for universal working was fully unfolded, not partially suspended, in its garb of flesh. "The word became flesh and tabernacled amongst us, and we beheld his glory full of grace and truth." In fact, as has already been indicated, although John in the exposition of his teaching begins with the pretemporal activity of the Logos, giving us as it were a new and higher Genesis, it is plain enough that in the growth of his own mind the process was in the opposite direction. It was manifestly the contemplation of the earthly life of Jesus which made a new heaven and a new earth for him. In that light he saw all his light. Above all, it was here that the true nature of God broke upon him. Far more clearly in his writings than in any other part of the New Testament do we find God conceived as Love. Where did he learn that? From Jesus of Nazareth. His life was love. He that sent him, Who was greater than he, must then be perfect love. Love was the impulse of creation; the principle revealed in history. God's life too is an eternal giving of Himself. He cannot leave the Creatures He has made, but must in His only Begotten Son come down to seek and to save that which was lost.

"So in the thunder comes a human voice." In the nature of such a Being there can be no conflict between Mercy and Justice—another Pauline antithesis. It is not the case that it is optional with Him whether he be kind or no, whereas He must be just. He is all grace and judges no man. Men judge themselves by wilfully closing their hearts, in selfishness and pride, against Him. "This is the condemnation that He has come into the world" in light so plain and gracious that even a child may see Him, and yet men "love darkness rather than the light because their deeds are evil."

So the man Christ Jesus as breathing and moving love unveils to us the true nature of God. Love is the innermost law and secret

of the Universe. It is also therefore the law and norm for man. Man is essentially a dependent being. He cannot live by himself or for himself alone. He must attach himself—digging down deep beneath the surface of his own immediate merely natural existence—to the universal life of spirit. That must flow through him or he dies. Just in so far as he remains shut off in the narrow cell of his own lower ephemeral interests and selfish desires for perishable things, he dwells in darkness and death; in an atmosphere where his best powers and noblest joys are stifled. Faith then, the receptivity by which we communicate with the life of God, presented to us in Jesus, that is in the only adequate and fully accessible form, in the life of a man like ourselves, who exhibits and realizes God in such fullness that he can say of himself truly, "he that hath seen me hath seen the Father"—Faith is the one great organ of our higher life, the lungs as it were by which we breathe God: enter into Him and He into us. There is no possible opposition here between Faith and Works; no opening for anti-nomian perversions as with Paul. Faith by which we take God in, that is, take light and love in, so far from being opposed to good works is only the inward side of the one identical thing of which they are the outward side: to use John's own figure the only possible root of the only real good works: insomuch that it may itself be called the one good work which Christ requires of us. "This is His commandment that we believe on Jesus Christ." They spring spontaneously from it as the grape clusters do from the vine-branches which must in their turn be vitally united with the parent stem—God in Christ—if any fruit-bearing sap is to circulate through them. Any other however specious looking products which do not grow from this deep fount of divine life are the mere gum and wax-work fruits and flowers of a mechanic hypocrisy.

From the height of this standpoint it is easy to see how for John the early crudities melt away. The contracted moulds derived from the past into which the early Church must of necessity run the new truth; the forensic rubrics, the wild phantasmagoria of a postponed worldliness, literal second comings, carnal millenarianism in general, have not indeed been altogether eliminated; but they have been reduced to a quite subordinate place and have become the most transparent of symbols. And what counts for still more, the central truth itself reaches in him such clear and simple and all sufficient expression, that its radical incommensurableness with these earthen vessels grows to be palpably manifest. What can become of the old clothes drawn from the store-houses of Pharisaic dualism, to which God was a task-master and judge, man his hard-worked creditor and servant, sweating through a mill-round of mechanic drudgery with his

eye fixed on some reward or punishment very unequally probable, but equally remote, equally gross and equally disparate from the deeds by which they were supposed to be deserved, what can possibly become of all this lumber of half-digested metaphor in the presence of such words as "God is love," "He that loveth is born of God and dwelleth in God?" They fade as doth a garment and vanish away. The mustard-seed has already grown into a stately tree, shooting up clear away into the universal sunlight, far seen and separate from the jungle of Judaic undergrowth entwined about its roots. John has penetrated quite through the fore-court of the Jews; the Jews who are with us still, sometimes in high places authoritatively disseminating their Judaism, often with touching earnestness and good faith; the veil of Moses before their eyes unto this day; he has reached the inmost shrine, the very heart of Jesus. To do in love what God has given us to do—that is our life. None other can enter into that life for us; it is our own, and *we* must enter into it. There is no other life possible for us, here or elsewhere, but only death. There needs, there can be no other reward, which does not sink into insignificance beside it, than the ever increasing power, and willingness to do this will of God for us, and the ever unfolding glory of his face who gives us might to do it in his love, the growing intimacy and joy of fellowship with him and with the invisible company of his servants in all ages, as we go from strength to strength. If God's own innermost life be love, what other heaven can he give us than more of Himself; a fuller portion of His own life and larger scope for the exercise of it? And on the other hand, sin and selfishness are hell; not any outward punishment. If it were some outward punishment, we might be simply let off from it, or, as has often been thought to be Paul's meaning, some arrangement might conceivably be made by which another might bear it in our place. But from John's hell, this dreadful home-felt hell, which is not "circumscribed to one self-place" in some remote limbo, but is everywhere at our doors and in us; what escape can there be from that here or elsewhere except the escape from ourselves, from our lower and worsen selves? God, John tells us, has not condemned us to that hell, not God but ourselves. It is there as if it were in spite of Him, and must be there. He cannot compel us to be good: compulsory goodness is no goodness at all. So long as man to whom he has given will, that not as dead clock-work but as independent conscious spirits they might re-affirm His own Will, which is their life; so long as these free creatures of His will to shut their eyes and hearts against their own good and to live in death apart from Him, then just so long to all Eternity must that Hell endure, until at length, as we hope, though John nowhere expresses

this hope, all hearts and wills yield finally to His pursuing Grace, in that guise of wrath and sharp pain which it must here necessarily put on, and so at the last all things be reconciled to Him, and God Himself be all in all.

JOHN MACNAUGHTON.

THE MOON HOAX.

THROUGHOUT all ages of the world's history, there has been a tendency in the human mind to grasp after the new, the sensational and the mysterious; and to foster this inclination, there have always been plenty of men ready and willing to devote their time and energies to the making of, so-called, new and wonderful discoveries. This craving for sensationalism is best exhibited perhaps in modern yellow journalism, and in the avidity with which people buy "elixirs of life," and quack patent medicines.

Astronomy—the most ancient of all the sciences—has been singularly free from attempts to pander to this desire on the part of man. The human mind, as a rule, has regarded reverently the discoveries of this grand old science, but even into it some instances of sensationalism have crept.

While looking through the library of Otto Stuve, which was obtained by Columbia University not long since, I ran across a pamphlet which is thoroughly interesting although the matter contained is extremely surprising. This is the celebrated "Moon Hoax," a work which attracted a great notoriety about the middle of the century just past, and in the hope that it may still be interesting to the QUARTERLY readers, these few pages are written.

Early telescopic observations of the moon were conducted with the confident expectation that our satellite would be found to be an inhabited world, and that much would soon be learned of the manners and appearance of the Lunarians. With each increase of telescopic power, a new examination was made; and it was only when the elder Herschel's giant reflector failed to show any inhabitants on the face of the moon, that men began to look in doubt, and think that, perhaps, the examination was hopeless. Herschel himself seemed to be of the opinion that the moon was inhabited, for, after describing the relations, physical and seasonal, that prevailed on the surface of the moon, he adds, "there only seems wanting, in order to complete the analogy, that it should be inhabited like our earth."

When Sir John Herschel carried his great telescope to the Cape of Good Hope, the hope was renewed that he might be able to tell us

something about the people on the moon. In fact, so confidently was this hope entertained, that when the "Moon Hoax" appeared about this time purporting to be "*Great Astronomical Discoveries*, lately made by Sir John Herschel, LL.D., F.R.S., etc., at the Cape of Good Hope," there were many people who took every word of these wonderful discoveries in good faith, and were firmly convinced that the moon was inhabited.

The full title of this extraordinary little pamphlet is: "The Moon Hoax; or the Discovery that the Moon has a Vast Population of Human Beings," by Richards Adams Locke, 8 vo., New York, 1859. The publisher in his preface relates that it was first published in the "New York Sun" in August and September, 1835, that the interest in the discoveries was so intense that the circulation of the paper augmented five fold, these articles in fact, being the means of giving the journal a permanent footing as a daily newspaper. "Nor did this multiplied circulation of the paper satisfy the public appetite. The proprietors of the paper had an edition of 60,000 published in pamphlet form, which was sold off in less than a month."

It seems best to let this unique little book tell its story as nearly as possible in its own language. The author, Locke, tells us that he is "indebted to Dr. Andrew Grant for the almost exclusive information concerning these facts." Dr. Grant was the "pupil of the elder, and for several years past, the inseparable coadjutor of the younger Herschel, the amanuensis of the latter at the Cape of Good Hope, and the indefatigable superintendent of his telescope during the whole period of its construction and operation."

The story is told in part as follows:

"We are assured that when the immortal philosopher to whom mankind is indebted for the thrilling wonders now first made known, had at length adjusted his new and stupendous apparatus with a certainty of success, he solemnly paused several hours before he commenced his observations, that he might prepare his own mind for discoveries which he knew would fill the minds of myriads of his fellow-men with astonishment, and secure his name a bright, if not transcendent conjunction with that of his venerable father, to all posterity. And well might he pause! From the hour the first human pair opened their eyes to the glories of the blue firmament above them, there has been no accession to human knowledge at all comparable in sublime interest to that which he has been the honored agent in supplying. Well might he pause! He was about to crown himself with a diadem of knowledge which would give him a conscious pre-eminence above every individual of his species who then lived, or had lived in the generation that had passed away. He paused ere he

broke the seal of the casket which contained it. To render our enthusiasm intelligible, we will state at once, that by means of a telescope of vast dimensions, and an entirely new principle, the younger Herschel, at his observatory in the Southern Hemisphere has already made the most extraordinary discoveries in every planet of our solar system ; has discovered planets in other solar systems ; has obtained a distinct view of objects in the moon, fully equal to that which the unaided eye commands of terrestrial objects at a distance of a hundred yards ; and has affirmatively settled the question whether this satellite be inhabited.

The elder Herschel, several years before his death, conceived it practicable to construct an improved series of parabolic and spherical reflectors, which, united all the meritorious points in the Gregorian and Newtonian Instruments, with the highly interesting achromatic discovery of Dollond. His plan evinced the most profound research in optical science and the most dextrous ingenuity in mechanical contrivance ; but accumulating infirmities, and eventually death, prevented its experimental application. His son, Sir John Herschel, was so fully convinced of the value of the theory that he determined upon testing it at whatever cost. Within two years of his father's death he completed his new apparatus, and adapted it to his father's telescope. He found that the magnifying power of 6,000 times, when applied to the moon, which was the severest criterion that could be accepted, produced, under these new reflectors, a focal object of exquisite distinctness, free from every achromatic obscurity, and containing the highest degree of light which the great speculum could collect from that luminary. Yet the advance he had made in the knowledge of this planet, though magnificent and sublime, was thus but partial and unsatisfactory. A law of nature, and the finitude of human skill, seemed united in inflexible opposition to any further improvement in telescopic science, as applicable to the known planets and satellites of the solar system, for unless the sun could be prevailed upon to extend a more liberal allowance of light to these bodies, and they be induced to transfer it for the generous gratification of our curiosity, what adequate substitute could be obtained ? Telescopes do not create light, they cannot even transmit unimpaired that which they receive. That anything further could be derived from human skill in the construction of instruments, the labors of his illustrious predecessors, and his own, left the son of Herschel no reason to hope.

The limits of discovery in the planetary bodies, and in this one especially, thus seemed to be inevitably fixed. But about three years ago, in the course of a conversational discussion with Sir David Brewster, on the invincible enemy of powerful magnifiers, the pau-

city of light, Sir John diffidently inquired whether it would not be possible to effect a *transfusion of artificial light through the focal object of vision!* Sir David, somewhat startled at the originality of the idea, paused awhile, and then hesitatingly referred to the refrangibility of rays, and the angle of incidence. Sir John, grown more confident, adduced the example of the Newtonian reflector, in which the refrangibility was corrected by the second speculum, and the angle of incidence restored by the third. "And," continued he, "why cannot the illuminated microscope, say the hydro-oxygen, be applied to render distinct, and, if necessary, even to magnify the focal object?" Sir David sprang from his chair in an ecstasy of conviction, and leaping half-way to the ceiling, exclaimed "Thou art the man!" Each philosopher anticipated the other in presenting the prompt illustration that, if the rays of the hydro-oxygen microscope passed through a drop of water containing the larvae of a gnat and other objects invisible to the naked eye, rendered them not only keenly but firmly magnified to dimensions of many feet; so could the same artificial light, passed through the faintest focal image of a telescope, both distinctify (to coin a new word for an extraordinary occasion), and magnify its feeblest members. The only desideratum was a recipient for the focal image which should transfer it, without refracting it, to the surface on which it was to be viewed under the revivifying effect of the microscopic reflectors. In the various experiments made in the few following weeks, the co-operative philosophers decided that a medium of the purest plate glass was the most eligible they could discover. It answered perfectly with a telescope which magnified a hundred times, and a microscope of about thrice that power.

Sir John Herchel then conceived the stupendous fabric of his present telescope. The power of his father's instrument would still leave him distant from his favorite planet nearly forty miles; and he resolved to attempt a greater magnifier. Sir John had submitted his plans and calculations in adaptation to an object glass of twenty-four feet in diameter, just six times the size of his venerable father's. For casting this ponderous mass, he selected the large glass house of Messrs. Hartly and Grant (the brother of our invaluable friend, Dr. Grant), at Dunbarton. The material chosen was an amalgamation of two parts of the best crown, with one of flint glass, the use of which, in separate tenses, constituted the great achromatic discovery of Dollond. It had been found, however, by accurate experiments, that the amalgam would as completely triumph over every impediment, both from refrangibility and discoloration, as the separate lenses. Five furnaces of metal, carefully collected from productions

of the manufactory, in both kinds of glass, and known to be respectively of nearly perfect homogeneous quality, were united by one grand conductor to the mould; and on the third of January, 1833, the first cast was effected. After cooling eight days the mould was opened and the glass found to be greatly flawed within eighteen inches of the centre. Notwithstanding this failure, a new glass was more carefully cast on the 27th of the same month, which on being opened during the first week in February, was found to be immaculately perfect, with the exception of two slight flaws so near the line of its circumference that they could be covered by the copper ring in which it was desired to be enclosed.

The weight of this prodigious lens was 14,826 lbs, or nearly seven tons after being polished; and its estimated magnifying power was 42,000 times. It was therefore presumed to represent objects on our lunar surface a little more than eighteen inches in diameter, provided its focal image of them could be rendered distinct by the transfusion of artificial light. It was not, however, upon the mere illuminating power of the hydro-oxygen microscope, as applied to the focal pictures of this lens, that the younger Herschel depended for the realization of his ambitious theories and hopes, he calculated largely upon the almost illimitable applicability of this instrument as a second magnifier, which would supercede the use, and infinitely transcend the powers of the highest magnifiers in reflecting telescopes.

So sanguinely did he calculate upon the advantages of this splendid alliance, that he expressed confidence in his ultimate ability to study even the entomology of the moon in case she contained insects upon her surface!

Having witnessed the completion of this great lens, his next care was to construct a suitable microscope and the mechanical framework for the horizontal and vertical action of the whole. His plans in every branch of his undertaking having been intensely studied, even to their minutest details, were easily and rapidly executed. He awaited only the appointed period at which he was to convey his magnificent apparatus to its destination, the Cape of Good Hope.

The ground plan for the mounting is in some respects similar to that of the Herschel telescope in England. The observatory is a wooden building fifty feet square and as many high, with a flat roof. This is brought by means of parallel circles of railroad iron to the required position with respect to the lens. * * * * The lens, which is enclosed in a frame of wood, and braced to its corners by bars of copper, is suspended from an axis between two pillars which are nearly as high as those which supported the celebrated quadrant of Uleg Beg, being one hundred and fifty feet. Between the pillars is a dou-

ble capstan for hoisting the lens from its horizontal line to the height required by its focal distance when turned to the meridian; and for elevating it to any intermediate degree of altitude that may be needed. Having no tube, it is connected with the observatory by two horizontal levers, which pass beneath the floor of the building from the circular base of the pillars. * * * * The field of view, therefore, whether exhibited on the floor or on the wall of the apartment, has a diameter of nearly fifty feet, and, being circular, it has an area of 1875 feet.

It was about half-past nine on the night of January 10th, the moon having advanced within four days of her mean libration, that the astronomer adjusted his instruments for the inspection of her eastern limb. The whole immense power of the telescope was applied, and to its focal image about one-half the power of the microscope. We gazed upon the shores of the Mare Nubium of Riccoli; but why he so termed it, unless in ridicule of Cleomedes, I know not, for fairer shores never angels coasted on a tour of pleasure, a beach of brilliant white sand, girt with wild castellated rocks, apparently of green marble, varied by chasms, occurring every two or three hundred feet, with grotesque blocks of chalk or gypsum, and feathered and festooned at the summit with the clustering foliage of unknown trees, moved along the bright wall of our apartment until we were speechless with admiration. The water, wherever we had a view of it, was nearly as blue as that of the deep ocean, and broke in large white billows upon the strand. Our panting hopes were soon to be blest with specimens of conscious existence, for, beneath the shade of the luxurious trees we beheld our first animal. It was of a bluish color about the size of a goat, with a head and beard like him, and a single horn slightly inclined forward from the perpendicular. The female was destitute of the horn and beard, but had a much longer tail. It was gregarious and chiefly abounded on the acclivitous glades of the woods. In elegance and symmetry it rivalled the antelope, and like him it seemed an agile sprightly creature, running with great speed, and springing from the green turf with all the unaccountable antics of a young lamb or kitten. This beautiful animal afforded us most excellent amusement. Frequently when attempting to put our fingers upon its beard, it would suddenly bound away into oblivion, as if conscious of our earthly impudence; but then others would appear, whom we could not prevent nibbling the herb-age, say or do what we would to them.

We soon came across a beautiful valley, and found a large branching river, abounding with lovely islands, and water-birds of numerous kinds. A species of grey pelican was the most numerous;

but a black and white crane, with unreasonably long legs and bill, was also quite common. Near the upper extremity of one of these islands we obtained a glimpse of a strange amphibious creature, which rolled with great velocity across the pebbly beach, and was lost sight of in the strong current which set off from the angle of the island. We were compelled, however, to leave this prolific valley unexplored, on account of clouds which were evidently accumulating in the lunar atmosphere, our own being perfectly translucent. But this was of itself an interesting discovery, for more distant observers had questioned or denied the existence of any humid atmosphere in this planet. The moon being low in her descent, Dr. Herschel decided that it was useless to carry on labors further, especially as our minds were actually tired with the excitement of the high enjoyment we had partaken.

Our next night of observation was a beautiful clear night, and we set to our work filled with expectancy. While gazing at the landscape in the Valley of the Unicorn, we were thrilled with astonishment to perceive four successive flocks of large winged creatures, wholly unlike any kinds of birds, slowly descend from the cliffs and alight upon the plain. These were first noticed by Dr. Herschel, who exclaimed, "Now gentlemen, my theories against your proofs. We have here something worth looking at. I was confident that if ever we found beings in human shape, it would be in this longitude, and that they would be provided by their creator with some extraordinary powers of locomotion." Introducing a lens of higher power, we perceived that certainly they *were* like human beings, for their wings had now disappeared and their attitude in walking was both erect and dignified. By our lens we could bring them to an apparent proximity of eighty yards. They averaged four feet in height, were covered, except on the face, with short and glossy copper-colored hair, and had wings of thin membrane without hair, lying snugly upon their backs, from the top of the shoulder to the calves of the legs. The face, which was of a yellowish flesh color, was a slight improvement upon that of the large orang-outang, being more open and intelligent in its expression, and having a much greater expansion of forehead. The mouth, however, was very prominent, though somewhat relieved by a thick black beard upon the lower jaw, and big lips far more human than any species of the simia genus. In general symmetry of body and limbs, they were far superior to the orang-outang. The hair on the head was a darker color than that of the body, closely curled, but apparently not woolly, and arranged in curious semi-circles over the temples of the forehead. Their feet could be seen as they were alternately lifted in walking, but from what we

could see of them in so transient a view, they appeared thin and very protuberant at the heel. Whilst passing across the canvas, and whenever we afterwards saw them, these creatures were evidently engaged in conversation, their gesticulation, more particularly the varied action of their hands and arms, appeared impassioned and emphatic.

Turning from these creatures we surveyed the shores of the Mare Serenitatis, which is nearly square, being about 330 miles in length and width. This sea has one most extraordinary peculiarity, which is a perfectly straight range of hills, certainly not more than five miles wide. This singular ridge is perfectly *sui generis*, being altogether unlike any mountain chain on this earth or on the moon itself. Our lens brought it within the small distance of 800 yards. Nothing we had hitherto seen more highly excited our astonishment. Believe it, or believe it not, it was one entire crystallization!—its edge through the whole length of 340 miles, is an acute angle of solid quartz crystal, brilliant as a piece of Derbyshire spar just brought from a mine, and containing scarcely a fracture or a chasm from end to end!

But our eyes were still further gladdened by the sight of more inhabitants. These seemed to be of the same species as our winged friends, and having adjusted the instrument for a more minute examination, we found that nearly all the individuals of several large groups we saw were of a larger stature than the former specimens, less dark in color, and in every respect an improved variety of the race. They were chiefly engaged in eating a large yellow fruit like a gourd, sections of which they divided with their fingers, and ate with rather uncouth voracity, throwing away the rind. They seemed eminently happy, and even polite, for we saw in many instances, individuals sitting nearest these piles of fruit select the largest and brightest specimens, and throw them archwise to some opposite friend or associate who had extracted the nutriment from those scattered around him, and which were frequently not a few. While thus engaged in their rural banquets, or in social converse, they were always seated with their knees flat upon the turf, and their feet brought evenly together in the form of a triangle. And for some mysterious reason or other, this figure seemed to be an especial favorite among them; for we found that every group or social circle arranged itself in this shape before it dispersed, which was generally done at the signal of an individual who stepped into the centre and brought his hands over his head in an acute angle. At this signal each member of the company extended his arms forward so as to form an acute horizontal angle with the extremity of the fingers. But this was not

the only proof that they were creatures of order and subordination. * * * * But although evidently the highest order of animals in this lovely valley, they were not its only occupants. The most attractive of the quadrupeds was a tall white stag with lofty spreading antlers, black as ivory.* We several times saw this beautiful creature trot up to the parties of semi-human beings, and browse the herbage close beside them, without the least manifestation of fear on its part or notice of others. This universal state of amity among all classes of lunar creatures, and the apparent absence of every carnivorous or ferocious species, gave us the most refined pleasure and doubly endeared to us this lovely nocturnal companion of our larger, but less favored world.

During the month of March we were able to get some more observations, and while looking at the noble valleys at the foot of Atlas, we found a very superior species of Lunarian. In stature they did not exceed those last described, but they were of infinitely greater personal beauty, and appeared in our eyes scarcely less lovely than the general representation of angels by the more imaginative schools of painters. Their social economy seemed to be regulated by laws and ceremonies like the former beings seen, but their works of art were more numerous and displayed a proficiency of skill quite incredible to all except actual observers. I shall therefore let the first detailed account of them appear in Dr. Herschel's anticipated natural history of this planet."

This is the "Moon Hoax," with its flowery descriptions of plant and animal life on our satellite. It may be of interest to find out how much of these discoveries the people back in the thirties and forties believed? This we can gauge by quoting a few of the press criticisms as given in the contemporary daily New York papers:

"No article, we believe, has appeared for years that will command so general a perusal and publication."—*Daily Advertiser*.

"It appears to carry intrinsic evidence of being an authentic document."—*Mercantile Advertiser*.

"It is quite proper that the *Sun* should be the means of shedding so much light on the *Moon*."—*N. Y. Evening Post*.

"The account of the wonderful discoveries in the moon are all probable and plausible, and have an air of intense verisimilitude."—*N. Y. Times*.

This hoax was published in serial form in the *Sun* from August 25th to 31st inclusive.* About the same time there appeared three French translations at Paris, one at Bordeaux, and Italian transla-

*The writer has seen the original copies of the *Sun* containing the "Great Astronomical Discoveries," &c.

tions at Parma, Palermo and Milan. A "second edition" of this pamphlet was published in London, 12mo., 1836.

The authorship of this article was attributed to Richard Adams Locke, at that time the editor of the "*New York Sun*." But besides the great fluency of style and the masterful command of the English language shown by the "Moon Hoax," there is evinced in this article so accurate a knowledge of astronomical facts, even to the most scientific details, that it is evident none but an astronomer of more than ordinary ability could have written it. This Locke certainly was not. After severing his connection with the "*Sun*," Locke edited the "*New Era*," and soon after there appeared in this periodical another hoax, "The Lost Manuscript of Mungo Park," also by Locke. This, however, while showing the same peculiarities in style as the "Moon Hoax," lacked greatly the bold and daring conception in the plot of the latter, and as a result secured very little notoriety. It would seem, therefore, that there had been some bolder and more learned spirit than Locke's which had conceived the plot of the "Moon Hoax," and supplied the editor of the "*Sun*" with the astronomical facts necessary for the construction of the article. Dr. Andrew Grant alluded to in the text, seems to be as evanescent as the Lunarians. Who then, with such an idea, and the knowledge for its development, would be content to give it to another and remain himself unknown; and what could be his reason for so doing? We seem to find this man in the person of M. J. N. Nicollet, a noted French astronomer, who, for some unknown causes, had been compelled to leave France and seek refuge in America..

This astronomer, in connection with MM. Brosseaud and Bouvard, was the author of an important memoir, "Sur la Libration de la Lune"; and in Amer. Phil. Soc. Trans. Vol. VIII, 1842, pp. 306-310, we have a work of his published under the name of "Observations made at several places in the United States." With Nicollet as the author we find an explanation of the precise astronomical knowledge shown in our article, and especially the frequent use of the term "libration" in his descriptions of the moon. But we do not see any apparent reason why Nicollet should be willing to allow another to appear as the author of any of his articles. There are, however, a couple of stories about him which perhaps will throw a little light on the question. One story is that Nicollet was a fugitive from Paris taking some money that did not belong to him, and that his "Moon Hoax" was published in America, simply for the purpose of earning some money, and being a Frenchman, he obtained Locke's help to put the story into polished English. Another, and a more probable story, is that by this hoax, Nicollet endeavored to entrap his enemy, the as-

tronomer Arago, in which he succeeded, Arago circulating the wonderful story through Paris, until Nicollet in a letter to M. Bouvard, explained the hoax. With this for a motive, it can be easily seen that Nicollet would not care to have the hoax appear over his signature or allow any hint as to his identity to appear in the article.

It thus appears almost an assured fact that Nicollet, through the medium of Locke, was the real author of the "Moon Hoax," and that it is to him we are indebted for these very interesting "astronomical discoveries."

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Columbia University, New York City, May 1st, 1902.

THOMAS AQUINAS.

IN last number of the *QUEEN'S QUARTERLY*, it was pointed out that Thomas Aquinas, while wanting in the speculative genius and originality of Augustine, discharged an indispensable task in formulating the system of doctrine upon which the medieval theory of the Church was based. He represents that phase in the development of thought which sought to interpret the higher interests of faith and practice in the light of all the learning of the time, and especially by the aid of the ethical and political treatises of Aristotle. Thomas was the spokesman of the papal theory, which rested upon two great equations: The hierarchy is the Church, and the Church is the Pope. This theory had been operative since the days of the great Hildebrand, but it was Thomas who first made it part of a comprehensive Theology. The keynote of his system is that both dogma and practice harmonize with reason even when they transcend its unaided powers. This gives rise to the distinction between natural theology and revelation. The former contains truths discoverable by reason, the latter truths to which reason can by no effort attain. Yet reason, as a gift of God, has its own functions and its own rights, and it is even capable of rising from "the things that have been made" to their divine Author. There is, therefore, a kind of truth which is *common* to reason and revelation, and it is the function of philosophy in this reference to act as the "handmaid of faith," preparing the way for the reception of revelation. In the sphere of divine things Faith is higher than Knowledge, because its object is God, or the world in its relation to God. Hence the distinction between Theology and Philosophy.

The philosophy of Thomas borrows the Aristotelian distinction of *matter* and *form*, but combines it with ideas peculiar to medieval

Christianity. The human soul, though in this life joined to a material organism, is a *forma separata*, and is therefore immortal. Man is the highest being who is possessed of a natural body, but there is an ascending scale of being, beginning with the lowest inorganic things and passing by insensible gradatimes through the various hierarchies of angels up to God, the Absolute Form or Spirit. The will in man is determined by knowledge, and therefore in a sense the intellect is the higher faculty; so also divine wisdom prescribes the path of the divine will. The moral law is the command of God, but it is commanded because it is good, not good because it is commanded.

The theology of Thomas follows the order of the articles of faith, and therefore begins with the idea of God. The intuition of God (*visio intuitiva*) transcends even faith and is impossible to any created being otherwise than by supernatural illumination (*lumen gloriæ*). Lower than this, but higher than knowledge, is Faith, dealing with those "mysteries" which lie beyond the range of reason. The existence of God is a truth of reason as well as of revelation, and therefore can be established by a ratiocinative process. Rejecting the Ontological proof of Anselm, Thomas relies upon what Kant afterwards called the Cosmological and Physico-theological proofs. By the former he establishes the reality of a self-existent and absolutely perfect Being, and by the latter he further determines this Being as an intelligence and as the author of an ordered universe.

The proofs advanced by Thomas establish, as he believes, the existence of God as the first mover and the highest cause of all things, who is necessary, absolutely perfect and intelligent. Thus by a process of demonstration the existence and attributes of God have been proved. But reason can go no further. The Christian conception of God as 'one in three persons' cannot be established by ratiocination, because it expresses the inner essence of the divine nature, into which man in this life even when under supernatural influence can only catch a fitful glimpse. The doctrine of the Trinity is entirely a truth of revelation, and is therefore indemonstrable. Reason infers the existence of God from His works; but, as these are the product, not of any one of the three divine Persons, but of the Triune God, there is nothing in the visible world which reveals the inner essence of the divine nature. What place, then, is left for reason in connection with this 'mystery'? Thomas answers, that though it is indemonstrable, there are in the finite world, and especially in the rational creature, traces of the divine nature. Hence, he endeavors to make the doctrine of the Trinity more intelligible by means of analogies. Like Augustine, Thomas reduces the Persons of the Trinity to a re-

finer Modalism, but, taught by the controversies that had been waged over the doctrine by his predecessors, he endeavors to avoid attack by even more subtle distinctions than those drawn by his great model.

The 'procession' of Persons in the divine Unity can only be conceived after the analogy of spiritual beings. The activity of thought is purely 'immanent,' and yet knowledge is so far 'emanent,' that, emerging from the inner depths of the intelligence, it projects an ideal image of itself. Following this analogy, we must distinguish a two-fold 'procession' in God, corresponding to the distinction of will and knowledge. In knowing himself there proceeds from God the adequate thought of himself, the divine Word; in willing himself there is a procession of himself as the object of love, the Holy Spirit. In all created things, but especially in man, we find traces of the divine Trinity. As a limited substance modified in a certain way the creature derives its being from another, and thus points to the Father; as endowed with a determinate form in which a determinate thought is revealed, it points to the divine Word, which is the ideal pattern of all things; and as ordained to a determinate end, which constitutes the good corresponding to its nature, it points to the Holy Spirit. Man, on the other hand, not only exhibits traces of the divine nature, but is 'made in the image of God.' As in God there are two 'processions,' corresponding to intelligence and will, so the human spirit is a unity of knowledge and love. In knowledge there is an object or inner 'word,' in will this 'word' becomes an object of love. But man is only an 'image' of God; for, whereas God knows and loves Himself, man must know and love God, and only so can he truly love himself.

After thus endeavoring to show that the doctrine of the Trinity, though it cannot be adequately comprehended by our finite intelligence, may yet be figured after the analogy of the human spirit, Thomas has next to explain the relation of God to the world. The doctrine of the eternity of the world he, like his predecessors, absolutely denies, maintaining the creation out of nothing as an article of faith. But, while he holds that reason can demonstrate the fact of creation, Thomas refuses to admit that it can demonstrate that the world must have had a beginning *in time*. "It is to be asserted," he says, "that the world's not having always existed is held by faith alone and cannot be proved demonstratively; as was asserted also regarding the mystery of the Trinity . . . That the world had a beginning is credible, but it is not a matter of demonstration or knowledge. And it is useful to consider this, in case perhaps some one, presuming to demonstrate what is of faith, should adduce reasons that are not necessary, thus giving occasion for ridicule to infidels,

who might think that on the ground of such reasons we believe what is of faith."¹ Thomas, however, so far forgets his own warning, that he goes on to give a "probable" proof that the world had a beginning in time. The creation of the world cannot be regarded as necessary, for God was under no necessity to create it. Hence, the fact that He voluntarily brought it into existence best harmonizes with the doctrine that it had a beginning in time. In other words, the creation of the world in time seems best to agree with the doctrine of the absolute freedom of God. The purpose of the creation of the world, as all the schoolmen held, is to manifest the love of God, which seeks to communicate itself to other beings. For Thomas, indeed, the creation of the world is merely a contingent means whereby God fulfils His personal end; but, on the other hand, he represents this personal end as the supreme thought: "*divina bonitas est finis rerum omnium*"² (The divine love is the end of all things). If so, it is hard to see how the personal end of God can be separated from the existence of the creature.

The question of divine providence, which was first definitely raised by Origen, and had been vigorously discussed from the time of Anselm and Abelard, is treated with great fulness. Thomas finds the highest ground for the multiplicity and variety of things in God himself. Every efficient cause seems to produce an effect as like itself as the matter employed will allow. Hence God must intend to produce the most perfect image of himself, so far as his likeness can be imparted to created things. Now, a multiplicity and variety of things, combined in a definite order with one another, is a higher good than could be secured by the existence of a number of individual things, identical in nature, and unrelated to one another. Moreover, the world must contain spiritual beings, for only these manifest the spiritual nature of God. Now, if all created things, including man, derive their whole nature from God, must we not hold that all activity in the region of created things is the immediate and exclusive activity of God? No, answers Thomas: if God has made all things like Himself, they must, like Him, be endowed with self-activity. The distinction between God and the creature is that, whereas the creative essence is self-active because of the power inseparable from it, the power of the creature is derived from God. This principle, which is perfectly general, enables us to see that the human will is essentially free though derived from God.

The providence of God is not merely general, but extends to the minutest detail. If God did not care for every one of His creatures,

¹ Summa, P. I., Q. 46, Art. 2.

² Summa, P. I., Q. 44, Art. 4.

it must be because He had not the will to do so, since His power is infinite. But God's goodness extends to all, and therefore He wills the good of all. We must, however, draw a distinction. The order of the world is due to the combination of intelligence and will, but the particular form in which this order is realized is not incompatible with the self-activity of the parts, and with the subordination of these parts in the attainment of the final cause, the good of the whole. Hence, spiritual beings, which stand nearest to God, are the main instruments for the realization of the plan of divine providence, and to them all other beings must be subordinate. And since the will must be illuminated by the understanding, it is not incompatible with the freedom of man that some should govern and others be governed. Were the less intelligent to rule the more intelligent, the divine order could not be realized.

Since God is absolutely good, He must do all for the best. But Thomas refuses to admit that the infinite goodness of God demands the creation of an absolutely perfect world. For, as God's power is infinite, He must be capable of creating other worlds than this. When, therefore, it is said that the world is ordered in the best and most perfect way, this must be understood to mean only a relative perfection. The world as it exists perfectly attains the end for which it was created, but God might have created a more perfect world, both as regards the character of the parts and the order of the whole. It is nevertheless true that the world has been formed in the best and most perfect way. But, if so, what are we to say of evil? Can we reconcile divine providence with the evil in the world and with the freedom of will from which evil springs? To these questions Thomas gives an affirmative answer. In an ordered world, there must be gradations of goodness, corresponding to the variety and difference of things. Hence, there must be beings who can never fall from goodness, and next to them beings who are capable of falling from goodness. Now, beings that are capable of falling from goodness often actually do so, and this is evil. The perfection of creation therefore involves at once the possibility and the reality of evil. The perfection of the whole is compatible with the imperfection of the parts, if thereby the perfection of the whole is increased. Moreover, much good would be eliminated from the world if there were no evil in it, giving room for the display of patience under persecution and suffering, and the other spiritual qualities. Nor is divine providence incompatible with human freedom; on the contrary, with the removal of freedom the world would cease to be perfectly ordered, since without freedom virtue, justice and foresight in action are inconceivable.

Now, faith is concerned on the one hand, with the divinity of the Trinity, and on the other hand, with the humanity of Christ. As the Apostle says, "Christ Jesus came into the world to save sinners," and we must first ask how man has fallen into sin, in order to understand how he may be delivered from sin through the humanity of Christ. As originally created by God, the body of man was entirely subject to the soul, and the lower faculties of the soul to the higher, while his reason was subject to God. As the body was subject to the soul, no bodily passion could be hostile to the rule of the soul; hence man was not subject to death or disease. And as the faculties of the soul were under the rule of reason, man was in a state of perfect peace and harmony, since there was no disturbance from unregulated passions. Lastly, as his will was subject to God, man referred all things to God as the ultimate end, and in this consisted his righteousness and innocence. This subordination of all things to God was the cause of the harmony between reason and passion, soul and body. For, if we consider the various parts of which the body is composed, we see that there is nothing in the nature of the body itself to exclude its dissolution or to prevent the operation of passions hostile to life. Similarly, it is not involved in the nature of the soul that the sensuous powers should be subject to reason, for these are naturally excited by the love of pleasure, which is in many ways contrary to the commands of reason. It was therefore due to a supreme power, viz., God, that the rational soul was so conjoined to the body, that reason was superior to sense. If, therefore, reason was to rule the lower powers, it must be subject to God. Man, then, in his original state was so formed, that so long as his reason was in submission to God, his body would be subject to the soul, and the sensuous desires to reason. While this subordination continued he could suffer neither death nor pain. On the other hand he was capable of sin, because his will was not yet conformed to the ultimate end, and therefore death and pain were possible. The distinction between the immortality and freedom from pain of the first man thus differs from that of the saints after the resurrection, who can never suffer death or pain, because their will is absolutely submissive to God. Now, in order that man might be habituated to submit his will to God, he was commanded not to eat of the tree of the knowledge of good and evil—not that the eating of it was in itself evil, but that in this unimportant matter man might obey solely because God had commanded. The devil, who had already sinned, seeing that man might gain eternal happiness, sought to seduce him from the path of righteousness, and made his attack upon the weaker sex, in whom the light of wisdom was less strong; and to prevail the more readily, he promised what man naturally desired, the re-



removal of ignorance, higher dignity and perfect knowledge. The result of man's transgression of the divine command was that the entire equilibrium of his original state was destroyed. (1) The subjection of sense to reason was destroyed, and there arose in man the excitations of lust, anger and other inordinate passions. This is the conflict of flesh and spirit to which the apostle (Gal. V. 17) refers. (2) As the soul was now unable to keep the body under its control, man became subject to pain and death, which were no longer possibilities but necessities. (3) Other defects followed. Since the lower desires obtained the mastery, while the light of wisdom diminished, by which the will was illuminated so long as it was subject to God, man's affections were subject to sensible things and he fell into many sins. He sought aid from unclean spirits, and thus arose idolatry; the more corrupt he became, the further he receded from the knowledge and desire of spiritual things.

The sin of the first man involved all his posterity in these consequences. Nor is this contrary to justice, for it involves only the withdrawal of that righteousness which was a gift to Adam of God's free grace.

The difficulty may be raised, however, whether the want of original righteousness in Adam's descendants is to be imputed to them as *guilt*. How can there be guilt without personal transgression? The question may be solved by distinguishing between person (*persona*) and nature (*natura*). Just as in one 'person' there are many members, so there are in the same 'nature' many persons. And as all men are of the same 'nature,' the human race may be regarded as a single man, as Porphyry says. In the case of the individual man, though the various members are the instruments of sin, it is the *will* to which we attribute the sin; so in the single man constituting the human species, the want of original righteousness is a sin, not of the individual man as such, but of human nature in so far as it flows from the will of the father of the human race. While, therefore, the sins actually committed by the individual directly affect him in *person*, original sin only affects his *nature*. For, the first parent by his sin infected the *nature* of man, and thus indirectly the *person* of his posterity, who receive this corrupt nature from him. It must not be supposed, however, that all the sins of Adam or of other men are transmitted to posterity. The first sin of Adam deprived man once for all of the gift of original righteousness, and no subsequent sin can make the loss more complete, but only takes away or decreases some particular or personal good. Now, man does not generate an individual like himself in *person*, but only in *nature*; and hence what is transmitted from father to son is not sin which affects the *person*,

but only that first sin which has corrupted the *nature* of man. And as the *personal sins* of Adam are not transmitted to his posterity, so neither can posterity benefit from his repentance or any other merit attaching to him as an individual; for no act of an individual can in any way affect the total nature of the species. Hence the individual merit of Adam or of any mere man cannot possibly restore the whole nature of man to its original state. As original righteousness was a free gift of God, much more must its restoration be due to divine providence.

Man, then, can only attain to perfect happiness by the removal of the corruption produced by the sin of Adam. And this can be accomplished only by God, and indeed by God becoming man. In his Christology, in fact, Thomas gives such predominance to the divine factor that the human becomes something passive and accidental. He was the first to give a complete doctrine of redemption. He denied, however, that the death of Christ was necessary, maintaining that God could have remitted sin in the exercise of His free will. The reason he assigns for the death of Christ is that it was the 'most fitting,' because more and greater things are imparted to us in this way than if we were redeemed solely by the will of God. He argues, in the first place, that the suffering and death of Christ were the most fitting means of redemption. The suffering endured by Christ, including his own pain and the pain of sympathy for our sin, is represented as the sum total of all conceivable suffering. Here two distinct elements are contained: (1) Christ as *man* is the redeemer, because, as Augustine held, his suffering brings God's love home to our hearts and thus stirs in us a responsive love; (2) because the death of Christ was the most fitting means of winning for men justifying grace (*gratia justificans*) and the glory of beatitude (*gloria beatitudinis*). In the second place, Christ's suffering—which includes not only his suffering in death but his suffering in life—as absolutely voluntary, was a 'satisfaction' for our sin. The satisfaction was such that God had more love for the gift than hatred for the injury. This leads Thomas to conclude that the satisfaction offered in the divine-human life of the Mediator was not only sufficient but 'superabundant.' Christ, from love and obedience, suffered *more* than was required to balance the injury to God done by the whole human race: not only because of the magnitude of the love which led him to suffer; not only because it was the sacrifice of the God-man; but because it was an infinite suffering. It is worthy of remark that Thomas does not speak of a vicarious penal suffering. In the third place, by his voluntary suffering, Christ *merited* exaltation, but as this exaltation cannot be conferred upon one who is already divine, it passes

over from him to the Church of which He is the Head. For, just as the natural body is a unity, consisting of diverse members, so the whole Church, which is the mystical body of Christ, is counted as one person with its Head, that is, Christ.¹ Thus the satisfaction of Christ applies to all *believers* (*fideles*). The faith, however, by which we are cleansed from sin is not unformed faith (*fides informis*), which can exist even along with sin, but faith deriving from pure love (*fides formata per caritatem*), which alone is effectual.

We have now seen the interpretation which Thomas gives to the articles of faith. It is, however, in his doctrine of the Sacraments that the sovereignty of the Church received his strongest support. Faith lives in the contemplation and enjoyment of the sacraments; these are committed to the Church and are administered by the hierarchy; and thus the Church as an ecclesiastical organization is identified with the mystical person of Christ. This is the fundamental thought of Medieval Catholicism, of which Thomas is the spokesman.

The Sacraments of the Church, Thomas tells us, "have efficacy from the Incarnate Word Himself."² 'In some way' they 'cause grace.' The Sacraments are the 'instruments' through which God 'communicates in grace His own nature,' but they act "not by virtue of their own form, but only through the impulse they receive from the principal agent." "Hence, the effect does not derive its character from the instrument, but from the principal agent." The Sacraments "are applied to men by divine appointment for the purpose of causing grace in them." They are thus "at once causes and signs, and hence it is commonly said of them, that they *effect what they symbolize*." If it is objected that the passion of Christ is surely sufficient in itself for salvation, it is answered that the Sacraments are not useless, "because they work in the power of Christ's suffering, and the passion of Christ is *somehow* applied to men through the Sacraments." There is contained in the Sacraments "a certain instrumental virtue for conveying grace," and this virtue originates "from the benediction of Christ and the application of it by the minister to Sacramental use," a virtue which must be ultimately referred to the "principal agent." The Thomistic doctrine of the Sacraments is, as Harnack says,³ "at bottom nothing but a reduplication of the redemption by Christ, or, to put it otherwise, a second structure above the first, by which the first is crushed to the ground. As grace was conceived of physically, while this physical grace could not be direct-

1 Summa, P. III, Q. 8.

2 Summa, III, 60.

3 Harnack's History of Dogma, VI, 46.

ly connected with the death of Christ or derived from it, it was necessary to associate with God the Redeemer, besides the *instrumentum conjunctum* (the God-man Jesus), still another *instrumentum separatum* (the Sacraments).” By the conception of grace as a physical, mysterious act, by means of which objective benefits were conferred, Thomas virtually made the lower side of Augustinianism the higher, and thus destroyed its spirit.

We have still to consider the Thomistic theory of the State in its relation to the Church. Even if there had been no Fall, man would have found it necessary to unite in the order of the State. On the other hand, without the Fall there would have been no slavery, which involves the subjection of the slave to the interest of his master. But there is a rule over others, which is perfectly compatible with the freedom of the governed; firstly, because man is by nature a social being, and there can be no social life without a leader, whose sole interest is the common weal; secondly, because it is unreasonable that a man who is distinguished above his fellows in knowledge and justice should not employ his talents for the good of others. Now, law is a certain ordinance of reason with a view to the common good, entrusted to him whose function it is to secure that end. There is among men a natural law, based upon the distinction between good and evil; and human laws are special ordinances in conformity with this natural law. The question may be raised whether it is the aim of legislation to prohibit all the transgressions to which men are liable. The answer of Thomas is that, as human laws are applicable to all citizens, the majority of whom are not perfect in virtue, the State should only forbid those things which the majority are able to avoid, and mainly those injuries, the prevention of which is necessary for the security of human society. The State should not enforce all virtuous acts, but only those essential to the common weal. The aim of the governors should be to secure peace and unity among the citizens. There are two exceptions to the general principle of obedience to the ruling powers: first, when their commands conflict with a higher power; second, when they command something not within their jurisdiction. Hence in all that concerns the inner springs of the will, man is under obligation to God alone. But citizens are under obligation to obey the law so far as their social acts are concerned. This obligation, however, does not extend to those bodily acts which concern the preservation of the body and the perpetuation of the species; here the obligation is to God alone. Hence, sons are not under obligation to obey their parents in entering into marriage or maintaining celibacy and the like. But in all that concerns human affairs, the

subject is under obligation to obey his superiors—the soldier to obey the general, the slave the master, the son his father.

Besides natural and human law there must be a divine law in order than man may be led to attain to eternal happiness. The representative of divine law is the Church, and the Church has its unity in the Pope. The necessity of the Papacy is thus proved: If the Church is to be a unity, all believers must have one faith. Now, disputes arise in regard to points of faith, and unless these can be settled the unity of the Church will be destroyed. Hence there must be a single person to represent the unity of the Church. Now, it is evident that Christ cannot permit the Church, which he loves and for which he has shed his blood, to fall in pieces; and therefore it was ordained by Christ that there should be a leader and ruler of the Church. And this ruler, the Pope, must be the supreme authority in matters of faith. A new edition of the articles of faith is necessary for the avoidance of the errors that from time to time arise. It is the function of him who has authority to determine what are matters of faith, and to issue this new edition, in order that all may hold fast by the faith. Hence the Pope must determine all the more difficult questions which affect the faith of the Church. For it is essential that the faith of the Church should be one, and this cannot be secured unless there is a single Head of the whole Church whose decision will be accepted by all.

How far are Christians under obligation to obey their earthly superiors? In answer to this, we must consider that faith in Christ is the principle and cause of justice. Hence by faith in Christ justice is not overthrown, but confirmed. But justice requires that subjects should obey their superiors, since otherwise the stability of society would be impossible. Hence, believers are not freed from the obligation to obey their earthly princes by faith in Christ. At the same time they are not called upon to obey an usurper or unjust prince unless under peculiar circumstances. What, then, is the duty of Christians when a prince becomes an apostate from the Christian faith, i.e., the faith of the Church? Thomas answers that unbelief in itself is not in contradiction with sovereignty, because sovereignty is based on the law of nations, which is human law, whereas the distinction between believers and unbelievers is based on divine law, which does not abrogate human law. No one who sins by unbelief can lose the sovereignty by a decree of the Church. It is not the function of the Church to punish those who have never accepted the Christian faith. On the other hand, it may punish by a decree unbelievers who have accepted the Christian faith, and punish them by releasing their subjects from obedience to their authority. For the

apostate may by his authority corrupt or destroy the faith, since he cherishes evil in his heart. So soon, therefore, as he has been excommunicated by a decree of the Church, his subjects are by that fact released from his rule. It is true that the Church did not excommunicate Julian the apostate, but this arose from the fact that at that time the Church was still weak, and therefore permitted believers to obey him in matters that were not contrary to the faith, in order to avoid even greater danger to the faith.

Thomas applies the same principles in the case of unbelievers, heretics and apostates. Among unbelievers are heathens and Jews, who have never accepted the faith. These cannot be forced to become Christians, because faith is a matter of the will. But they may be prevented by believers from obstructing the faith, whether by calumnies, evil persuasions or open persecutions. And hence, believers frequently make war on unbelievers, not to force them to accept Christianity, but only to prevent them from obstructing the true faith. Heretics and apostates, on the other hand, must be subjected even to corporal punishment, in order that they may be compelled to fulfil what they have promised and to hold fast what they have once accepted.

These principles are consistently applied to the question of intercourse between believers and unbelievers. The Church forbids believers to have any intercourse with those unbelievers, who have deviated from the faith either by corrupting it, or by renouncing it as apostates. Against both the Church pronounces the punishment of excommunication. As to intercourse with those who have never been Christians, we have to consider position, circumstances and age. Those who are strong in the faith may have intercourse with unbelievers, because they may be able to convert them to the true faith; but those whose faith is weak must be forbidden intercourse with men who might seduce them from their faith.

Thomas does not admit that in principle there should be any toleration of other religions. The religious rites of unbelievers may indeed be tolerated, so far as these contain something useful or true, as in the case of the Jews, whose religion was a type of Christianity; but the rites of other unbelievers, which contain nothing true or useful, are in no way to be tolerated, except to avoid some evil or as a means of gradually leading unbelievers to the true faith.

As to the treatment of heretics, we must distinguish between what concerns themselves and what concerns the Church. The heretic is guilty of a sin which deserves not only excommunication but death. For it is much worse to corrupt the faith, in which is the life of the soul, than to utter false money. If therefore the coiner may

be handed over to the earthly prince to be put to death, with much more right may the heretic be not only excommunicated but punished with death. But the Church has compassion for the erring, and therefore it does not condemn the heretic at once, but only after a 'first and second admonition,' according to the teaching of the Apostle (Titus 3, 10). But if he is stubborn and unyielding in his heresy, so that the Church can no longer hope for his conversion, then, in its care for the salvation of others, it may excommunicate him and hand him over to the earthly court, in order that he may be removed by death from the world.

To criticise in detail the system of this cloistered philosopher would be a work of supererogation; its main interest is that it brings vividly home to us how far the modern world has travelled from the whole medieval view of life, and helps to convince us that no compromise is logically possible between a completely reasoned system of truth and an ecclesiastical system based upon authority. The medieval conception of the State as subordinate to the Church, and of the Sacraments as possessing in themselves a mysterious spiritual efficacy, was shattered to pieces by the Reformation; the eternal authority of the articles of faith, and the consequent opposition of faith and reason, has been overthrown by the whole development of science and philosophy in the modern world. The system of Thomas in truth contains within itself the seeds of its own destruction. The opposing elements in it are only held together by perpetual compromises, which conceal but do not get rid of the contradiction which they hold in check. The fundamental contradiction is that faith is assumed to be absolutely exclusive of reason. What lends colour to this assumption is that reason is conceived to be capable of no higher comprehension of things than that which results from the application of the category of causality; the result being that the vision of the divine is identified with a mystical elevation, only reached in fitful moments by a few select souls. Thus the true spirit of Christianity, which draws no fundamental distinctions between men, and denies any abstract opposition between the divine and the human, is perverted; and religion, instead of being a continuous life in God, is made a thing of rare and exceptional inspiration, possible only to a few. The same defect besets the ascetic ideal. It is not seen that, if religion cannot transform every human being and every part of life, it confesses its own one-sidedness; that the Christian must live in the whole, whether he is sweeping the steps of the temple or ministering at the altar; that the carpenter is not less a servant of the Lord than the statesman. In short, the spirit of the modern world demands the complete union of freedom and reason, whether it deals

with the construction of society, the search for truth, or the practical problems of everyday life. Man is spirit, and for spirit nothing is real that is not at once self-evolved and coincident with the truth of things; and neither self-evolution nor truth is possible without the freest play of the seeking, testing, constructive reason. Whatever does not do homage to this fundamental principle is still infected with the separatist spirit of the medieval world, and must and will be swept away in the onward rush of humanity.

JOHN WATSON.

THE MANUFACTURE OF BEET SUGAR.

THE beet sugar industry is one that promises to be of importance in this province, and the process of manufacture of sugar from beets has therefore become of general interest. Beet sugar cannot be made on the small scale, like maple sugar, because the process is much more complicated and needs elaborate apparatus. Most of the factories in the eastern and middle part of the United States have a capacity of about 500 tons of beets daily and cost in the neighborhood of \$500,000. In order to provide beets for a factory of this size, somewhat over 5,000 acres of beets are required, an acre being supposed to yield ten tons, which is perhaps slightly above the average obtained in Michigan where the conditions are most like ours. Beets should not be grown year after year in the same soil. A rotation of crops is necessary, and a factory such as has been spoken of should have access to twenty or twenty-five thousand acres suitable for beet culture.

A factory is in operation from ninety to one hundred and twenty days each year, the length of the campaign, as it is called, depending on the supply of beets. If the beets could be properly stored, there would be no reason why the factories should not be busy throughout the year.

The reason why beet sugar needs such elaborate apparatus for its production is that the juice, unlike maple sap, contains a number of substances beside sugar dissolved in it. These impurities are not only difficult to get rid of, but are disagreeable to the taste. They are partly organic acids and other organic substances some of which contain nitrogen, and are more or less similar to albumen the main constituent of white of egg, and partly salts of potash.

The percentage of sugar to the total solids dissolved in the juice is known as the coefficient of purity. If one hundred pounds of beets furnish a juice containing fifteen pounds of solid matter, of which twelve pounds are sugar, the beets are said to contain 12 per cent. sugar, of a coefficient of purity 80. A high coefficient of purity is very important because impurities prevent the sugar from crystallizing out from the juice when it is evaporated. If the coefficient of purity is below 80 the beets are inferior. As a rule, the farther north beets are grown, the greater is their sugar content and the greater is the purity. In Ontario very few of the samples grown under the direction of the Government were below 80—some were 89 or 90—the average being about 84 or 85.

When beets are brought to the factory they are sampled in order to test their sugar content and purity, about twenty pounds being taken at random from each load of two tons.

Thirty years ago beets were usually grated into fine pulp from which the juice was obtained by pressure, but by this process the tissues of the beet were torn into shreds and the juice contained not only substances soluble in water, but also finely divided solid matter and gummy substances which are not separated by filtration. The process now employed is called the diffusion process. The principle underlying this process may be illustrated by putting into a wide-mouthed bottle water containing salt, sugar and glue, tying parchment paper tightly over the mouth of the bottle and then inverting the bottle in a large dish of pure water. After a time, perhaps in a few minutes, certainly in a few hours, it will be found that the water in the dish is no longer pure but contains both salt and sugar but no glue. The parchment membrane permits the passage of the former but not of the latter. Sugar and salt are crystalline while glue is not, and the general rule is that substances like sugar and salt which are called crystalloids will diffuse through parchment and similar membranes, while colloids such as glue and starch scarcely diffuse at all. The tissue of the beet is made up of microscopic cells, the cell wall is of the nature of parchment paper and the juice in the cells contains different substances in solution. If, then, small pieces of beet, are placed in water, sugar and some other substances diffuse into the water, while still other substances are left behind within the cell. It is evident then that if the sugar be extracted in this way it will be obtained more pure than if the beet tissue be torn open.

In the factory the beets are cut by a machine into very thin slices only about one twenty-fifth of an inch in thickness, the slices being about two inches long and quarter of an inch wide. The corsettes, as the slices are called, pass from the cutting machine into the diffus-

ion cells. A diffusion cell is a cylinder about ten feet high and four feet in diameter, and holds about two and a half tons of corsettes. The cells, usually ten in number, are arranged in a series called a battery. When the battery is in full working order nine of the cells are in use while the tenth is being emptied and refilled. Water passes through the nine cells, one after the other, the solution gaining more and more sugar as it goes from cell to cell. We shall call the cell into which the pure water enters the first cell, and the last of the series in use the ninth. The ninth cell is the one which has just been filled with fresh beets, and water reaches it after having passed through the eight previous cells, each of which in order from the eighth to the first, is more and more exhausted of sugar. The water that is run into the first cell has already been heated to a temperature of 50° - 60° C (122° - 140° F). After staying in that cell for twenty minutes its temperature falls to about 40° C, and it is then passed through a heater to the second cell. The liquid already in the second cell goes through another heater to the third cell, and so on, the juice from the ninth cell being drawn off for further treatment. The cell that we have called the tenth and which is now refilled with fresh beets, is put into the series, the first one is cut out, the sugar having been practically all extracted, the exhausted corsettes are put into a press and the liquid still remaining with them is squeezed out. The cell that was second in the series now becomes the first, fresh water is run into it and so the round goes on.

The beet juice drawn from the last of the diffusion cells is turbid and smells of beets, it must be clarified and partially purified before the sugar is made to crystallize out. It is first heated to near the boiling point, which is a considerably higher temperature than that of the diffusion cells. By this means albuminoid substances are coagulated, just as an egg is made hard by boiling. Lime stirred up with water, what is called milk of lime, is then run in. The lime unites chemically with the organic acids present and with some other substances, forming an insoluble material which carries down with it mechanically other impurities with which lime does not unite chemically. Lime forms an insoluble substance with sugar, and so if all the solid were removed some sugar would be lost. To prevent this, carbonic acid gas is passed through the mixture of liquid and solid and the calcium saccharate (the compound of lime and sugar), is decomposed, a carbonate being produced and the sugar being returned to the solution. Great care must be taken not to pass too much of the gas or it will decompose more than it should and set free impurities once more. The mixture of liquid and solid is then pumped under pressure into a filter press which from the outside looks like an

oblong box, but which is made up of a series of frames across which canvas is stretched in such a way that the juice is squeezed through and comes out by an opening in the lower part of the filter press while the solid remains on the canvas, and owing to the pressure forms a fairly hard cake. When the filter press is filled with solid it is taken apart, the cake removed from the canvas and the press made ready for another charge. The solid material may be used as a fertilizer, the juice which is a bright clear liquid and has a slight smell of ammonia instead of the smell of beets that it had before the operation, may now be evaporated. Usually the process of liming and passing carbonic acid gas is repeated in a slightly modified form before evaporation is proceeded with.

Evaporation is carried on in a series of vacuum pans called a multiple effect. The shape and size of the pans differ considerably in different factories, but the principle is the same in all. The pans may be compared to a series of large tea-kettles joined one to the other so that the steam from the first goes to heat the second, the steam from the second going on to the third, and the steam from the third to the fourth. The steam is made to pass from one kettle to the next as above described by the simple expedient of exhausting steam from the last of the series by means of an air pump. The exhaustion in the last kettle, the fourth in the series, causes it to boil at a comparatively low temperature. Below this kettle there is a steam chamber connected directly with the third kettle, and since the fourth kettle is at a low temperature it condenses the steam from the third kettle and so makes it boil, at a temperature higher than in the fourth kettle to be sure, but still below the ordinary boiling point. The third kettle is connected with the second in the same way and the second with the first where the vacuum is but slight and the temperature very little below that at which water usually boils. The beet juice, after being evaporated to a certain extent in the first kettle or pan, is run into the second, third and fourth successively becoming more and more concentrated in its progress, till when drawn from the fourth pan the syrup is quite thick. One of the largest quadruple effects (set of four pans) made is capable of evaporating to the required extent 500,000 gallons of juice in twenty-four hours.

There are two advantages in evaporating in multiple effects—one that there is no sugar lost through overheat, another than there is less expenditure for fuel.

After the juice has been evaporated till it becomes a thick syrup, it is filtered through bone black, the material left when bones are heated without access of air. By this means the juice is freed from still more of the organic impurities, as well as from the residue of

lime that has escaped separation in the previous processes, for charcoal of which bone black is one of the varieties most suitable for the purpose, has an absorptive action on many substances so that liquids containing these substances are freed from them. Sugar is not kept back by the bone black, nor are the potassium salts, so that the filtered solution has the taste due to both.

The next stage in the process is evaporation of the solution still farther till the sugar crystallizes out. Owing to the fact that the quantity of sugar in solution is much greater than the quantity of salt, the former crystallizes out first. The evaporation is carried on in a vacuum pan constructed differently from those in the multiple effect, because in the latter the object is to drive off the water as quickly as possible, whereas the essential condition of the former is that the sugar should crystallize properly. The pan is an upright cylinder, but the top and bottom instead of being flat are cone-shaped. The juice is heated by means of steam coils placed vertically around the sides of the lower third of the pan.

At first, juice is run into the pan to a height not much above the top of the steam coils, and as evaporation goes on, more and more juice is run in. After a time crystals begin to form, and still more juice is admitted, care being taken to keep the heating coils always well covered. It is desirable that the fresh juice, as it runs in and is evaporated, should not form new crystals, but should increase the size of those already formed so that the grains may become large, since larger crystals make a firmer sugar more easily washed and freed from adhering liquid. If the heating pipes are not covered the boiling of the juice is liable to be tumultuous and the juice is thrown up by the escaping steam. This tends to form many small crystals, while quiet boiling is favorable to the formation of large grains. Gradually the vacuum pan fills with crystals, much more water having been evaporated than could have been put into the pan at the start. In this way the sugar from a large quantity of juice is obtained in one charge. This style of boiling is called boiling to grain. Ultimately the pan becomes nearly filled with a pasty mass of crystals and water, the crystals being nearly pure sugar, and the water containing dissolved in it a large quantity of potassium salts and other impurities. It is evident that evaporation should not be allowed to go on long enough to cause these to crystallize out with the sugar. The mixture of liquor and crystals is run out into a V-shaped trough, where it is kept constantly stirred while cooling, in order to prevent the mass solidifying together. The *masse-cuite*, as this mixture is called, is then run into a centrifugal, which is like a tub with its sides made of metal sheeting in which are almost innum-

erable fine perforations. The centrifugals can be rotated a thousand times a minute. The rotation throws the *masse-cuite* against the circumference of the centrifugal and the liquid escapes through the fine holes which are too small to permit the passage of the sugar crystals. The crystals have still some adhering liquid, and as this liquid has a very disagreeable taste it must be removed. This is done by spraying upon the crystals, while still in the centrifugal, pure water or a solution of pure sugar, or by applying steam. The sugar thus obtained is fit for food though it is not perfectly pure, and if required pure must be refined. Refining is usually carried on as a separate industry, one refinery being able to handle much more sugar than would be provided by a beet sugar factory.

The liquor escaping from the centrifugal is sometimes boiled down again. Since it contains less sugar in proportion to the impurities than the original juice, it cannot be boiled in installments until the vacuum pan is full of crystals. Usually, when it has reached the point of incipient crystallization it is run out into a cooler where crystals form as the temperature falls, the formation of crystals being promoted by constant stirring. The mixture is then put through a centrifugal as before. The second crop of sugar is not so pure as the first, and is not very palatable, while the molasses obtained from it is very impure.

The sugar as it comes from the centrifugal is not dry. The drying is done in a "granulator," one form of which consists of two concentric cylinders, the inner one of which is heated by steam. The sugar is introduced at the end of the granulator into the space between the inner and outer cylinders. The granulator is slightly higher at one end than at the other, and it revolves. This revolving serves two purposes. It throws the sugar on the hot inner cylinder and it causes the sugar to gradually pass from the upper end of the granulator, where it was introduced, to the lower end where it is taken out dry. The drying is promoted by a current of air through the granulator produced by an exhaust fan.

Molasses got from beet sugar cannot be used in the same way as molasses obtained from the sugar-cane, and it does not come into the market for domestic use; its taste is far too disagreeable. In some places it is fermented, the alcohol distilled off and the residue used as a fertilizer. As might be supposed, it is a valuable fertilizer for land on which beets are to be raised.

In the more fully equipped factories, the molasses is worked over for its sugar content. There are several processes in use; the one most common in Germany is probably not used at all in this country. The processes mainly consist in forming insoluble com-

pounds of sugar with lime or strontia, separating these insoluble compounds from the liquid with its soluble impurities and afterwards recovering the sugar from the compounds. In the working out of the details of these processes much investigation has been necessary. Ten years ago in Germany there were four processes employed, each one accounting for between fifteen and thirty-four per cent. of the sugar recovered. In 1899 the last process had so far ousted the others that eighty-nine per cent. of the sugar recovered was obtained in this way. This is the strontium process, which, so far as I know, is not used in America.

The recovery of sugar from beet molasses is one of the triumphs of industrial chemistry, but cannot be more fully described in this article.

JOHN WADDELL.

A SCHOOL OF FORESTRY FOR ONTARIO.

IN the April QUARTERLY, Dr. A. T. Drummond has given reasons for a more scientific treatment of our forest areas, and has shown that to this end we must provide for the education of foresters and forest engineers. He cites President Roosevelt's forcible allusions to Forestry and Irrigation in his recent message to Congress, and the expansion of the U. S. Division of Forestry into a Bureau of Forestry, with an appropriation this year of \$185,440. Colleges of Forestry have been established at Cornell and Yale Universities, and forestry departments in several other universities. Lumbermen, pulp companies, and owners of forest areas in thirty-three States, from Maine to the Rocky Mountains, have taken advantage of the offer of the Bureau of Forestry to make working plans of their forest lands. The Dominion has an equal interest in the subject. Private owners and provincial governments derive large revenues from forests, and the sources of these revenues should be conserved by scientific management. Problems of water supply for canals, lakes, and navigable rivers, and of drainage and irrigation, are also involved. Both Provincial and Dominion Governments have made good beginnings by setting aside large areas as forest reserves, by inaugurating systems of tree planting and fire protection, and by popularizing the idea of forest conservation. Dr. Drummond also points out that there are thirty species of trees now being used in the United States for manufacturing, and that an investigation of our woods other than pine and spruce would probably show some with valuable qualities of an especial kind. He concludes that the time is ripe for the appearance in Canada of the forest engineer. Many companies in the United

States now employ such college educated men, and the Forestry Bureau employs only skilled foresters. The forest engineer must be a highly educated engineer with an especial knowledge of forests. A suitable place for training such men would be in a School of Forestry connected with the School of Mining, where practical experience could be obtained by utilizing the Ontario Government reserves to the north of Kingston.

Dr. Drummond has clearly shown the necessity of forest engineers for Canada, and of a School of Forestry to educate them; but he has not indicated the way in which students for such a completely new profession might be brought to the School, nor the steps which might be taken to ensure their finding employment after graduation. It is quite plain that the mere opening of a School of Forestry in Canada would not cause fifty or a hundred young men to seek its walls the first session. There is no great thirst for forestry education yet. The very meaning of it is just beginning to be known throughout the land, and forestry as a profession would be looked upon as very problematical by our practical youth. The conditions are somewhat similar to those prevailing some ten or fifteen years ago in mining, when the men who were studying mining engineering could be counted on the fingers. Now, there are some two hundred students of mining engineering in Canada. When the School of Mining was opened at Kingston nine years ago, the outlook for students was not more promising than it is now for forestry. To create the demand for such education was our problem. It was solved by three means: (1) *Short courses* for practical men (prospectors and others), held here in January and February. These attracted many students, some of whom entered upon and completed a four years' course and are now practising as mining engineers. (2) *Summer mining classes* in mining camps and other centres. These classes have been found so valuable and popular that they are still being carried on, an annual appropriation for that purpose being made by the Ontario Government. Students have been attracted to longer courses in this way. (3) *By exploring parties* of students and others interested, under the guidance of professors. In all these ways education in mining has been popularized, and *the supply of educated men has created a demand for them*, so that, at this date, graduates have no difficulty in securing employment.

The Provincial and Dominion Governments have helped on this movement by adopting in part a policy which they might well carry out *in toto*, viz., reserving for students of this class the minor positions on survey and exploring parties, and other scientific work carried on during the summer.

The educational problem in forestry is precisely like that just described, and a somewhat similar course will lead to the same results. There are large numbers of men now engaged in Canada in the care of forest areas. Some of these could be gathered to the school every winter for short courses of a simple and practical character but scientific enough to open their eyes to the larger fields beyond. The Professor of Forestry would spend part of each summer in visiting places where forest interests are large. He would by lectures and class instruction spread the idea and arouse the interest of young men looking toward a scientific profession. Squads of men could be instructed every summer in the practical details of forestry, by assembling them on the forest reserve in charge of the school. Provincial and Dominion Governments would naturally adopt the policy now pursued in the United States of employing students in the summer on their forest reserves and survey parties. But, it must be remembered that the great majority of ambitious and able young men in Canada are almost too poor to bear the expense of a scientific education. 'Earning their way' is undoubtedly a fine discipline, but it is often too severe a trial of endurance, and I have sometimes seen it fatal. There is another way—a ladder of learning. Great Britain is now pouring out her wealth in scholarships for this purpose, and in many counties in which these scholarships are awarded, there is a 'poverty limit.' A boy whose parents have an income above that limit cannot take a scholarship. The limit ranges in different counties from \$750 to \$2,000. Such limits might have to be considerably lowered to suit our case. The Dominion might well make an annual appropriation to defray in part the expenses, at the School of Forestry, of a certain number of students from each Province, the selection to be made by a matriculation examination, or in some other way which would secure the ablest students. Fellowships or scholarships could also be awarded to the best graduates, in the form of appointments to certain junior positions in the Departments of Forestry (Dominion and Provincial). In this way two purposes would be served, (1) Graduates would be initiated into their profession, and (2) The country would secure in time a corps of finely educated and practically trained men to work out our problems in forestry, irrigation and drainage. Private owners would, as in the United States, soon see the advantage of employing such men as managers of their forests; and the profession would thus become an established one.

The first step was taken towards this at the School of Mining in January, 1901, thus appropriately marking the beginning of the new century. A conference was held on the subject of forestry education, opening with a most brilliant and suggestive lecture by Pro-

fessor B. E. Fernow, of New York State College of Forestry. We were fortunate in having with us on that occasion the Minister of Education, who expressed himself as delighted to see that the question of forestry was receiving attention here, and thought it would be a grand thing for the country, if a school of forestry were established at Kingston; for Canada had reached the time when she must face the question of how her lands are to be re-timbered. A year has passed, and the interest then shown in the subject by the Minister of Education and many others gathered at the conference has become widespread. The growing interest was evident at the annual meeting of the Canadian Forestry Association in Ottawa in March. The sessions were largely attended, and a noticeable feature was the presence of many prominent lumbermen, whose contributions to the discussions showed that they are ready for the coming of the forest engineer. His coming has now been assured by the announced intention of the Ontario Government to assist the School of Mining in establishing a College of Forestry in Kingston.

W. L. GOODWIN.

THE WOMEN'S RESIDENCE.

THE ideal of to-day is the commonplace of to-morrow—we attain the heights to which we aspire, only to perceive higher peaks beyond. For centuries a narrow idea of woman's sphere had been accepted, she was regarded as the home-maker but her function was largely industrial and demanded neither intelligent comprehension of her work nor of life. As social changes relieved her of some of the drudgery of the house, she sought opportunity to study and her first contention was for equality of opportunity with man. To gain this equality she had to prove that she could pursue the same studies and do the same work as he did. Having proved her point and gained access to all the intellectual privileges open to men she is commencing to see that she needed, not a different sphere, but an enlarged conception of her sphere. She is not so ready to assert to-day her demand for equality with man, as to plan that the enlarged opportunities of the class-room shall not rob her of her womanly prerogatives. Her entrance to college halls has enlarged the conception of college life.

Twenty years ago, when the first women students gained admission to Queen's, the educational ideal was intellectual training, culture for culture's sake. The first college women were eager for learning,

but their ideal of education included little beyond the mere acquisition of knowledge. Twenty years, however, have widened the nature and purpose of a college training; to-day, the ideal college course aims to fit the individual for better personal satisfaction in life and for better service to society. If the college is to fulfil this enlarged ideal, the training of the classroom must be supplemented by elevating aesthetical, physical and social influences. General courses in art and music, as well as literature, with pictures and illustrations by scholarly performers, must be provided, not as regular subjects on the curriculum but as part of the cultural atmosphere of the college. The Levana, the women's undergraduate society, took a step in this direction two years ago, when it arranged the course of lectures on music. This was followed by a more extensive course of lectures on music and art last session, and larger plans have been made for the coming year. The play given each year by the Modern Language Society and the Shakespearean recitals of the Dramatic Club have done much to awaken an interest in the aesthetic side of College life. The effort to create a cultured home for the women students was the next evidence that a more comprehensive educational ideal was gaining ground at Queen's.

In July, 1901, Principal Grant sanctioned an experiment which a few women who were interested in the residence question desired to make. A furnished house was rented for the seven months of the College session, a lady was secured to take the management, and ten girls spent last winter there. The receipts from the students paid all the expenses except the rent of the furniture, and true to the traditions of Queen's, the house was self-governing. This experiment having proved a success, plans are now being made to furnish a house capable of accommodating twenty students. The Residence will aim to provide the best conditions for maintaining the physical life of the students. The house that has been leased stands in spacious grounds, so the sun will have access to every room, the sanitary conditions are receiving due consideration, the plumbing is new and the plans for heating and ventilation complete. Much care will be given to the proper selection and dainty serving of the food. The external advantages of the residence are so obvious that many people think that the features which are simply incidental are the main object.

Too many students leave College with their theories of art in one corner of their brain, and their theories of life or rather practice, for too often they have no intelligent theory, in quite a different corner. Truthfulness, simplicity, harmony, subordination of ornament to purpose and adaptability, are among the cardinal principles of all art. The student in her art course is learning how these principles found

expression in various phases of life and how success or failure followed as they were obeyed or ignored. She ought to find the effort to incorporate them in her daily life more easy in a community where all were at least conscious of their effect on all life, than in a community where some of the members had not grasped their significance. These principles may be taken as a criterion by which to measure the culture to which a house or an individual has attained. The class-room has taught the worthlessness of merely external forms of morality and that all moral and religious observance should spring from the spiritual life rather than from authority. The aspiration of the Residence would be to inculcate that in conduct as in religion, the highest incentives are inward, to provide an environment where there will be an intellectual appreciation of beauty and a spirit that seeks its expression in the details of daily life, rather than the observance of social forms, and to unite the women who feel the need of working out a higher home life than is possible in the average boarding house. The idea of the value of environment is not a new one; the old Greek educator never conceived of intellectual training separated from a harmonious environment for the student; beauty of thought found expression in the aesthetic relations of everyday life.

According to the statistics of the American Alumnae fifty per cent of College women marry and their life work becomes the creation of a helpful, healthy environment. Although the first difficulty which confronts the home maker of to-day is the industrial one, which needs knowledge as well as experience to solve, more and more the problem of homemaking will become the problem of creating conditions physical, mental and moral, that will develop the best citizens. The necessity for the application of intelligence to all the details of daily living will be recognized. The first steps towards an ideal seem so far from the goal sought, that one hesitates to point it out. Not only in providing helpful surroundings for the student, but in emphasizing the importance of the home and the wide sphere a woman in developing it has for her education, the Residence however imperfectly it may fulfil its object, stands for the increasing importance that educated women are placing on the home. The whole trend of College life is almost inevitably towards criticism rather than action, this habit of criticising rather than endeavoring to act is bad in every way, for as soon as one commences to act one discovers the difficulties in the way of any successful achievement. It is in the effort to overcome difficulties that principles are strengthened. Art is the fruit of the union between struggle and knowledge, and in some way the college must endeavor to inculcate the necessity for the effort as well as the knowledge, in order that the student may leave college with more

faith in the lessons taught there and determination to persevere in the attempt to carry them into practice. At present the majority of graduates give over the struggle too quickly when they do not succeed in attaining the ends they seek. The Residence will be one attempt to emphasize the necessity for persistent intelligent effort by women to work out the highest ideals in their future life work.

"Who seeks for heaven, alone to save his soul
May keep the path but will not reach the goal."

The struggle after a higher life must be shared to yield its highest rewards. The ideal which unites a household in an effort to put theories into practice has a higher value and a success beyond the attempt of the individual to attain this end alone, for culture is not only "a passion for perfection but a passion for making it prevail." To unite the students in a corporate home life which one and all are interested in maintaining at a high point of efficiency, is one of the fundamental aims of the Residence. Last year, it had to prove that it could be self-governing and self-supporting, this coming session all the energies must be turned to completing the furnishing of the house, after that the committee will be free to direct its attention to the cultural side of the Residence. Every idea has to work through crudities and mistakes to its ultimate fulfilment and we do not anticipate any flowery path of progress for the Residence, but the goal kept in view is the creation of a cultured home which shall be helpful to the expression of the theories of the class room in everyday life, believing

"Nor soul helps flesh more than flesh helps soul."

ALICE A. CHOWN.

THE COLLEGE.

REPORT OF THE VICE-PRINCIPAL FOR SESSION 1901-2.

NUMBER OF STUDENTS—SESSION 1901-2.

Undergraduates in Arts (attending).....	313
General students in Arts (attending).....	29
Post-Graduates in Arts (attending).....	18
Undergraduates in Arts (extra-mural).....	126
Post-Graduates in Arts (extra-mural).....	11
Students in Theology.....	31
Students in Practical Science.....	105
Students in Medicine.....	187
	<hr/>
	820
Registered in two faculties.....	15
	<hr/>
	805
Number of Students in 1900-1.....	727
	<hr/>
Increase in number of Students in 1901-2.....	78

It was customary for Principal Grant to refer in his annual report to the losses sustained by the University during the year. On this occasion it is my melancholy duty to refer to the greatest loss of all, the removal by death of the Principal himself. None but those intimately associated with him in the work of the University can thoroughly realize the extraordinary combination of brilliancy of conception with scrupulous attention to detail by which he was distinguished. Naturally of a bold and sanguine temperament, when occasion demanded he could display the tenacity and patience of the man of routine. Now that he is gone, every member of the University feels that he must do his utmost to carry out the immediate plans which the Principal had formed, leaving the way clear for his successor. Of these plans perhaps the most pressing was the raising of fifty thousand dollars for the equipment of the Mining and Engineering buildings now in process of erection, and the raising of ten thousand dollars for the better equipment of the Medical Faculty. It was also his hope that one other building might be erected, for the accommodation of the Library, which is now very much incommoded by want of space.

The new Arts building, referred to in last year's report, is now almost complete, and will be ready for occupation in October. This building will stand for all time as a symbol of the enlightenment and

generosity of the citizens of Kingston and of the close and friendly relations subsisting between the City and University. If this cannot be said of the County of Frontenac, it must be remembered that the people of the County are not brought into such direct contact with the life of the University as the citizens of Kingston, and are therefore unable to appreciate in the same vivid way how great is its influence in uplifting the whole community. It was a disappointment to the friends of the University to find that the County of Frontenac refused the sum asked for the erection of a Convocation and Examination Hall, required to complete the original plan of the new Arts building. No such indifference was felt by the students, who have once more shown how ardent is their love for their Alma Mater. No sooner was the by-law submitted to the County voted down than the students of their own initiative resolved to raise a sum sufficient to build the Hall, to be called by the name of their revered Principal. They have reported to the Trustees that the amount already subscribed is \$34,000, over \$12,000 of which has been subscribed by the students themselves, and \$4,500 by the Professors. It has therefore been decided to begin the erection of the "Grant Hall" at once, and the foundation stone will be laid in the Autumn.

The grant made by the Ontario Government to the School of Mining provides for an institution so closely allied to the University two large and commodious buildings, the one to be devoted to Engineering, the other to Mineralogy and Geology. The corner-stone of the Engineering building was placed, on April 29th, by Sir Sandford Fleming, K.C.M.G., the honoured head of the Engineering profession in Canada. On the same day the Honorable Mr. Harcourt, Minister of Education, laid the foundation stone of the building to be devoted to Mineralogy and Geology, and in the course of a very happy and scholarly address he announced the intention of the Government to establish a School of Forestry as an addition to the School of Science.

Some progress has been made in regard to the changes in the Constitution of the University. The special committee of the General Assembly was re-appointed with additional members to continue the conferences with the Trustees of the University on this subject. A joint meeting was held at Kingston on April 29th and 30th last, at which after careful consideration the outline submitted of the new Constitution was approved with certain modifications.

DEGREES CONFERRED.

In Arts (B.A., 56; M.A., 19).....	75
In Practical Science (B.Sc.).....	14
In Medicine (M.D., C.M.).....	31
In Theology (Testamurs, 8; B.D., 3).....	11

The honorary degree of LL.D. was conferred on Mr. N. W. Hoyles, K.C., Principal of the Law School at Osgoode Hall, and Mr. John Seath, Inspector of High Schools in Ontario. The honorary degree of D.D. was conferred on the Rev. Thomas Hart, B.D., Professor of Latin and Greek in Manitoba University, and the Rev. William Clark, Professor of English Literature in Trinity University.

THE FACULTY OF ARTS.

Since last report the teaching staff in the department of English Language and Literature has been increased by the addition of Mr. John Marshall, M.A. as Assistant.

At the last meeting of the Board of Trustees, two Fellowships in Philosophy were established of the annual value of \$400 each. The Fellows for 1902-3 are, in Mental Philosophy, Mr. R. A. Wilson, M.A., and in Moral Philosophy, Mr. John M. McEachran, M.A., who take the place of the Rev. John Sharp, M.A. By the retirement of Mr. Sharp the University has lost the services of a highly efficient and faithful Tutor.

As the Board of Trustees at its meeting in October last decided to postpone the appointment of a Professor of French, the main burden of the department of Modern Languages and Literature fell upon Professor McGillivray, assisted by an additional Tutor. The Honour work was, however, strengthened by the lectures of Professor Dyde on German Classical Literature, which will be continued next session. At a recent meeting the Board appointed Mr. P. G. C. Campbell, B.A. (Oxon.), as Professor of French, which will enable Dr. McGillivray to devote his main attention to German Language and Literature. Mr. Campbell, who comes with high recommendations from the Master of Balliol and others, besides obtaining Honours in Classical Moderations and Literae Humaniores, also passed the Final School in French in the University of Oxford.

In the department of Mathematics Mr. J. Matheson, M.A., has been appointed "The William Nickle" Assistant to the Professor of Mathematics. This appointment was made necessary by the withdrawal of Mr. W. G. Fraser, M.A., who only agreed to act as Assistant for one Session.

In his last report the Principal pointed out the need of strengthening the department of Oriental Languages. The Board of Trustees has in the meantime instituted a Fellowship in Hebrew, which has been offered to Mr. James Wallace, M.A., who last Session conducted the whole of the work in Junior Hebrew with marked success. This important department ought, however, to be further strengthened as soon as possible.

Reference to the report of Professor Knight, herewith appended,

will show how greatly the attendance in Animal Biology has increased and the necessity of larger laboratory and class-rooms.

It is advisable that a separate building should as soon as possible be provided for the joint accommodation of Botany and Animal Biology.

THE THEOLOGICAL FACULTY.

Last session the illness of Principal Grant made it impossible for him to give lectures, but by the kindness of the Professors in Theology the work of the Session was carried on in a satisfactory way. Professor McComb took the place of the Principal and lectured with acceptance in Systematic Theology, while Professor Ross and Professor Jordan took their share of the additional work. During the past year \$30,000, part of the \$40,000 allocated to Queen's University from the Century Fund, was received, but owing to the low rate of interest now current on investments, this will not meet the loss of revenue caused by the cessation of the \$2,200 hitherto received from the Temporalities Fund. It is therefore hoped that congregations will increase their contributions to the College Fund.

MEDICAL FACULTY.

The attendance in Medicine continues to show an increase, 171 being registered during the past Session as compared with 151 of the preceding Session. It is pleasing to note the increase in the number of Medical students who prepare for their profession by first taking an Arts course. In order to induce more of them to broaden the foundations of their professional studies, the Senate has instituted a course of study leading to the degrees of B.A., M.D., in six years. In arranging the details of this course it was found necessary to accept *Materia Medica* as an equivalent for one of the regular science subjects in Arts. This was, no doubt, objectionable on account of its inferior educational value, but the objection was largely removed by the Professor of *Materia Medica* agreeing to add to his practical work in Pharmacy a course of experiments illustrating the physiological action of drugs. A corresponding course in Science and Medicine leading to the degrees of B.Sc., M.D., was also agreed upon, and thus Pathology, Bacteriology, Sanitary Science and Mental Diseases were added to the list of subjects in the faculty of Science.

During the summer of 1901, another storey was added to the building, the increased space being devoted entirely to Anatomy. The rooms hitherto used for this subject were thoroughly renovated and have been assigned in part as museum, library and reading room, and in part as a large laboratory for Bacteriology. The small labor-

atory previously occupied by Dr. Connell was used last winter by Dr. Knight and Dr. Campbell for practical work in Physiology and Pharmacy.

Additional laboratory space is still badly needed.

LOSSES DURING THE YEAR.

Reference has been made above to the death of Principal Grant, but it seems only fitting that the following resolution of the Board of Trustees should be placed on record:—

"We, the Trustees of Queen's University, feel that we cannot allow our first meeting since the death of Principal Grant to pass without recording the great sorrow with which we miss the familiar face of one who for twenty-five years sat at this Board, guiding us by his far-seeing counsel, and inspiring us with something of his own consuming zeal. And we desire to convey to the relatives of our beloved friend the great sympathy we feel for them in their bereavement. While we know that none can experience the same poignancy of grief as they, we venture to hope that they may derive a measure of consolation from feeling that every member of this Board, in common with the sons and daughters and the devoted friends of the University in this and other lands, shares with them in a common sorrow. We would also venture to remind them that the counsel of our departed friend himself would have been, rather to labour earnestly for the fulfilment of the great work that still remains to be done, than to dwell too long on the irrevocable loss we have all sustained. Though he is removed from us, his spirit will ever animate and inform the Institution to which he gave a new and completer life: and we feel that it would show a distrust of the good providence of God to fear that a life of such unswerving devotion to the University, the Church, the Dominion and the Empire, should have been spent in vain."

The usual reports are submitted.

JOHN WATSON, *Vice-Principal*.

STATEMENT OF REVENUE AND EXPENDITURE OF QUEEN'S COLLEGE, KINGSTON, FOR THE YEAR ENDING APRIL 2ND, 1902.

Revenue.

Temporalities Board.....	\$ 575 00
The Professors, Beneficiaries of the Temporalities Board.....	60 00
Kingston Observatory—Grant from Government.....	500 00
Rent of Carruthers' Hall.....	1,250 00
Rent (temporary).....	1,500 00

THE COLLEGE.

89

Rent of Lands.....	135 00
Chancellor's Lectureship (2 years).....	500 00
John Roberts Allan—Chair of Botany.....	150 00
Fees.....	17,497 48
Interest on Mortgages and other Securities.....	18,726 98
General Assembly's College Fund:	
Church Agent.....	\$2,383 15
Congregations contributing direct.....	795 37
	<hr/>
	3,178 52
Receipts for Scholarships.....	2,422 31
Interest on Jubilee Fund Subscriptions.....	2,670 68
Balance Deficiency.....	8,256 71
	<hr/>
	\$57,422 68

Expenditure.

Deficiency of former years.....	\$ 8,262 09
Salaries—Professors and Lecturers in Theology.....	9,200 00
“ Professors and Tutors in Arts.....	25,167 00
“ Other Officers.....	3,789 64
Chancellor's Lectureship (2 years).....	500 00
Church Agent—Commission on Collections for General Assembly's College Fund.....	60 00
Insurance.....	337 24
Library, Laboratories, Museum, Gymnasium, etc.....	2,752 00
Taxes, Repairs and Grounds.....	1,287 35
Scholarship account.....	2,422 31
Advertising, Printing, Stationery and Supplies.....	2,338 00
Travelling expenses.....	333 50
Fuel, Water, Gas and Electricity.....	847 76
Contingencies.....	125 79
	<hr/>
	\$57,422 68

J. B. McIVER,

QUEEN'S COLLEGE, KINGSTON, April 28th, 1902.

Treasurer.

Examined and found correct.

J. E. CLARK,

D. CALLAGHAN,

Auditors.

GYMNASIUM FUND.

Amounts paid on this Fund.

June 1st, 1901—Paid to date.....	\$2,014 07
Paid through W. F. Nickle.....	30 00
Interest on Amounts.....	76 00
Principal Grant, in full.....	250 00
	<hr/>
Total.....	\$2,370 07

April 26th, 1902.

WILLIAMSON MEMORIAL SCHOLARSHIP FUND.

Amount previously paid.....	\$2,699 70
Dr. A. E. Malloch, Hamilton.....	100 00
W. L. Grant, Toronto, 1 on 250.....	50 00
W. A. McPherson, Denver, Col., 3 on 50.....	10 00
Rev. Robert Campbell, Montreal, 4 on 50.....	10 00
Rev. M. MacGillivray, Kingston.....	5 00
Rev. W. H. Easton.....	5 00
Rev. J. G. Stuart, London.....	5 00
Dr. Robert Ferguson, London.....	5 00
Thomas Alexander, London.....	5 00
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	\$2,894 70
Subscriptions bearing interest @ 6 per cent.....	200 00
	<hr/>
	\$3,094 70
Subscriptions still to be paid.....	220 00
	<hr/>
	\$3,314 70

April 28th. 1902.

"01" FELLOWSHIP FUND.

Amounts paid to date.....\$ 794 00

DEAN FOWLER SCHOLARSHIP FUND.

Amounts paid to date, including interest.....\$ 930 00

GRANT HALL FUND.

Amounts paid to date.....\$7,194 00
 June 6th, 1902.

CHAIR OF CHURCH HISTORY.

The following subscriptions have been received since list published in
 QUARTERLY, July, 1901:

R. G. Reid, Montreal.....	\$5,500 00
David Maclaren, Ottawa, bal. on \$500.....	100 00
John Mather, Ottawa, bal. on \$500.....	100 00
Hon. E. H. Bronson, bal. on \$250.....	50 00
Alexander McNaughton, Cornwall.....	50 00
Rev. W. W. Peck, Napanee.....	50 00
H. F. McLachlan, Arnprior, bal. on \$200.....	40 00
C. J. Booth, Ottawa, bal on \$100.....	40 00

Other subscriptions of \$25 and under from sundry persons, amounting to
 \$570.00, were received.

Total amount at credit of this Fund is \$23,100.00.

SIR JOHN A. MACDONALD CHAIR OF POLITICAL SCIENCE.

Amount previously received.....	\$22,308 90
Hon. Senator Clemow, Ottawa.....	250 00
	<hr/>
	\$22,558.90

LIBRARY.

During the past year the following additions have been made to the Library:

Purchased.....	1057 volumes.
Donated.....	1225 "
Bound Periodicals, etc.....	168 "
Total.....	2450

Among the donations were valuable gifts of books from the Chancellor, Mrs. Stafford Kirkpatrick, Mrs. Bennett, of L'Original, and others.

The need for a convenient and spacious consulting room for the students has been much felt. This want will now be met by the establishment in the new Arts building, of a most comfortable and roomy consulting library, intended specially for pass work. Additional accommodation will also be provided by connecting the students' present reading room in the main building, with the class room lately used for English and History, by an arch, and fitting it up as a second consulting library, which, as it will be in close connection with the main Library, will be chiefly for the use of Honour students. The Divinity class room on the other side of the hall has been connected with the Library by a doorway, and the room has been fitted up with shelving round the walls, and with shelved tables for bound newspapers, and now forms a valuable addition to the Library as a stackroom. Though these alterations in the main building can only be regarded as a temporary arrangement, pending the erection of a separate Library building, they will materially relieve the present congested condition of the Library, which has interfered with satisfactory work. The additional labour consequent on these much needed changes, has necessitated the appointment of another assistant to the Library staff, and it has been decided that one shall be appointed before the commencement of the autumn session.

The following summary of the financial statement is taken from the Auditors' report:

Balance to credit of Library, May 1st, 1901.....	\$ 265 01
Received from the Treasurer.....	1,968 00
Gifts, Private Accounts and other sources.....	219 13
	<hr/>
	\$2,452 14
Expenditure.....	2,392 26
	<hr/>
Balance.....	\$ 59 88

THE MUSEUM.

The Curator begs to report that a very fine collection of Lepidoptera (Butterflies) was presented to the Museum last December by Mr. Paul Hahn. The collection consists of three cases; the specimens are in perfect condition, accurately named, and very valuable for study.

A fine specimen of an owl was presented by Mr. John Sharp, M.A.

No additions have been made to the Mineralogical collection, as all new specimens are handed over to the School of Mining.

The Herbarium has been increased by a large collection of plants, (including many Marine species), made in Canso last summer by the Curator. The

facilities for the study of our Canadian Flora have been greatly improved, and will be utilized when the necessary accommodation is secured in the new building.

BOTANY REPORT.

Number of students registered in the Botany Classes:—

Pass Class (of whom 2 were extra-mural).....	19
Preliminary Honours.....	5
Final Honours.....	4

—
28

The first two classes were smaller than usual, owing probably to the fact that the greater number of Science students are now attracted to the Mining and Engineering Departments.

A very great change has taken place during the last few years in the study of Botany. Morphology and Classification, which formerly constituted almost the only subjects of Botanic study, have been largely displaced, whilst Histology, Physiology and Ecology have been substituted and are growing in importance every year. It is now a universally recognized fact that most diseases are due to the attacks of specific germs, i.e., of members of the family of plants called Bacteria, and the modern science of medicine is based upon this fact. "The whole science of aseptic and antiseptic surgery is also based on the knowledge that these plants are the agents which cause inflammation and blood-poisoning in surgical operations." The success of the dairy business in the production of butter, cheese, etc., is altogether dependent upon a knowledge of the species of Bacteria suitable for the production of the best marketable article. "The recognition of the great importance of these plants has led to extensive development of methods of cultivating them artificially." The scientific knowledge of farming is largely due to the study of Bacteria, Moulds, Rust, Smut, and other minute vegetable organisms.

Physiology and Ecology, (i.e., a knowledge of the adaptation of plants to their environment), have also found their way into the simplest Botanical Text-books, and occupy a very prominent position in all advanced College Classes. During the last few years I have delivered a course of lectures on these subjects, but the want of necessary room, and the absolute impossibility of performing the experiments necessary to illustrate these subjects, without suitable apparatus, limited the amount of practical work required by the advances of Science. A knowledge of Botany is also indispensable for the study of Forestry. In view of the accommodation furnished in the new building, I earnestly desire to devote the summer vacation to the two following objects:

1. I wish to visit Cornell and some other universities to see the arrangements and apparatus required for the practical study of Physiology and Ecology. Successful work depends upon proper equipment.

2. I intend, if possible, to spend most of the summer in the collecting of plants for use next session and for exchange, and also in studying the effects of the principal ecological factors upon the Flora along the lake shores and on the sand dunes. A large amount of this kind of work is done under the management of the Agricultural Department at Washington, and by organized parties of students and Professors of the Universities in the United States. Where the subjects of Ecology and Forestry are studied, work of this character is absolutely necessary, but to accomplish it I must depend upon the assistance and liberality of the Board.

Last summer I spent the time between June 28th and August 26th at Can-so, N. S., collecting the Flora of the district for College work and for exchange, and succeeded in securing over 6,000 specimens, representing more than 500 species. A complete set of these have been added to the Herbarium and will furnish valuable material for study in the future.

The increase of work in the new building will necessitate the employment of an assistant.

JAMES FOWLER.

ANIMAL BIOLOGY.

The total registered attendance during the past Session was 143. Of this number 39 were registered in the pass class, 15 in preliminary honours, and 6 in final honours.

The attendance in the first year in medicine was 45, and in the second year 38.

The number registered in the eight months Session in medicine was 31, and in the second year 38. Of the second year students 11 were graduates in medicine, 6 were third year students, and the rest belonged to the regular second year class. The graduates and the third year men were preparing for the Primary Examination of the Ontario Medical Council—hence their attendance along with second year students.

Eight years ago the total attendance in my classes was 79; during the past Session it was 141, or an increase of nearly 80 per cent.

Unfortunately, class room accommodation has not kept pace with the increased attendance. My pass class, composed of both Arts and Medical students, numbers 82, while the class room is seated for only forty. The other forty disposed themselves around the room on stools as best they could. As a result of the overcrowding and defective ventilation, two lady students fainted in the class on different occasions last winter.

Nor is over-crowding the only inconvenience resulting from increased attendance. Demonstrations with a class of 80 students and one instructor is almost useless. Each student should have the use of a microscope during many of the demonstrations, and we have only 33 instruments. We need 50 more. An attempt was made last winter to remedy this lack of microscopes by dividing the classes into two divisions, and repeating every demonstration with each division, but this is a serious tax upon the time and energy of the instructors. Moreover, there is the difficulty of forming a time-table which will not conflict with other classes.

It was expected last spring (1901) that the enlarged medical building would enable us to unify the organization and teaching in Animal Biology in two directions, (1) by transferring the Museum specimens from the present Arts building to the new Medical museum; and (2) by affording additional room for experimental physiology. Neither expectation has been realized. The Medical Faculty needs all the space in their new museum for their own purposes; and the additional laboratory space expected for experimental physiology had to be shared with practical pharmacy, to the manifest disadvantage of both. Apparatus has to be taken out of the cases and returned after every demonstration, thus entailing double labor upon the instructors.

Moreover, this experimental work in physiology and pharmacy is yearly becoming more important. The days have gone by when didactic lectures

alone will suffice in these subjects. Toronto and McGill, following the example of Harvard University, have instituted courses in physiology in which the experimentation is carried on by the students themselves, just as has been done for years past in Physics and Chemistry. We should begin similar work with our students next October, but in order to do it properly we should have a well-lighted laboratory, fitted up with laboratory tables and an ample supply of apparatus, and apparatus cases.

Ten years have seen a wonderful development in the teaching of physiology. In 1892 a course of lectures with a few experiments by the lecturer was all that was considered necessary. The student was taught *about* physiology. Now he proceeds to study physiology for himself. He comes into contact with Nature at first hand. The old method made the student depend upon the authority of the teacher and text book; the new makes him depend upon his own observations and deductions. In the old method the experiments illustrated the lectures; in the new, the lectures discuss and elucidate the experiments.

Such is the method of modern physiology, and such we ought to practice at Queen's, for unless we give our Medical students as sound a training as they would get elsewhere, we have no moral right to receive them.

As regards honour students, the pressing need is for more museum specimens, and for biological magazines containing the original papers of the great workers since Darwin. Until these are obtained, no research work in Animal Biology can be done at Queen's. But these needs have been emphasized in previous reports, and further reference to them is now unnecessary.

To summarize: 1. An attendance of 82 students in my pass class renders a larger class room absolutely necessary. Adjoining such a class room should be a small room suitable for a *class* museum, such as must be used in lecturing to pass students.

2. In order to avoid the duplication of demonstrations, two large well-lighted rooms should be set apart, one to be used as a laboratory for experimental physiology, and one for histology. If possible these two rooms should be separated by a smaller room which would be used as a preparation room.

3. As my salary is paid entirely by fees in medicine, and as 60 out of the 143 students belong to the Arts department, it would seem just that a permanent tutor or lecturer—now greatly needed on account of the increased attendance—should be appointed, and paid for out of funds at the disposal of the Arts department.

4. I crave permission from the Board of Trustees to be allowed to solicit subscriptions to a fund with which to purchase apparatus for my department.

REPORT OF DEAN OF PRACTICAL SCIENCE FACULTY.

The position of the Practical Science Faculty, as it at present stands and in as far as I have connection with it, is somewhat unique, consisting as it does of a number of departments, some of which are wholly or almost wholly connected with the older constitution of the University, while others are under the control of an independent body of governors, and only nominally a part of the University. It is for this reason that I cannot give a complete report of matters appertaining to the Practical Science Course.

The most numerously represented department of the faculty is that of Mining in some of its branches, and the report having more distinctive relation to these is presented to the Governors of the Mining School by the Director.

This report, then, while it is to some extent general, will deal more partic-

ularly with those parts of the work with which I am more immediately connected.

Seven years ago we began the Practical Science faculty with only two students, for although Chemistry and Mineralogy and Geology are also subjects in the University, Mining as a subject had not yet been initiated. It was certainly a bold undertaking, and I remember well the opposition given to the venture by some members of the Board of Trustees. But that we were justified in our action, is amply proved by the circumstance that the number of students in Practical Science during the past Session was 103.

I predicted in my report some four years ago, when the Gymnasium building was first occupied, that we must be prepared to look forward to, and meet the needs of, a larger amount of accommodation and an increasing expenditure in carrying on the work.

Two years ago we took over the Gymnasium for laboratory purposes, to the great disgust of a considerable number of gymnastically inclined students and their friends. But that we acted wisely will be admitted when I tell you that no less than 60 students were registered in the Mechanical Laboratory during the past winter, and that, even with the Gymnasium thrown in, our accommodation has been not a whit too great, and that if the current increase of students continues for another couple of years we will have to consider the propriety, if not the necessity, of adding a wing to the present workshops.

There may be some people of one idea, who live in so ethereal and spiritual an atmosphere that they have no sympathy with things outside their common range of thought, and who look upon a workshop as something fit only for rude and uncultured mechanics. Well, the Mechanical Laboratory probably stands on somewhat higher ground than this, as it is truly an educational institution. And we who have had long years of experience in dealing with young men in search of knowledge, know that there is no department in which the characteristics of tractability, patience, neatness and taste, and determination to succeed, on the part of the student, are more strongly evidenced, or are more susceptible of direction and guidance than that of the workshop.

In speaking of the shops I must say something about the expenses connected with them, as we have no Sir William McDonald to come to our aid. They have been run as cheaply as possible, and so cheaply that I sometimes felt ashamed of it. And although comparisons may be odious, yet I feel that I must make a comparison in order to enforce my point. Thus far the supervision and direction of the shops has cost nothing; but there are two instructors, one in Carpentry and one in the Machine shop, and I feel that these men are insufficiently paid when we consider the character of their work and the increasing demand on their attention and patience.

The cost of the shops during the past year has been about \$800 for wages, material, fuel, etc., and this has supplied accommodation and instruction to 60 students, or about 4,500 hours work. It costs this city about the same sum per annum, and one year ago cost it a great deal more, for doing not one-half this amount of work in Carpentry alone in its Collegiate Institute. I do not mean to convey the idea that the city is paying too much, but rather that we are paying too little.

The heating of the shops is somewhat of a nuisance to us, as it necessitates the paying of a Janitor whose services might well be dispensed with, were the building heated from the central station as I hope it may be. And the advantage would be a double one, as it would free us from the dust and ashes so detrimental to edged tools.

The blacksmith-shop when first built was something of a tentative affair; but it is now too small to supply the demands upon it, and is very inconveniently situated for winter work. Its insufficient accommodation materially increases the cost of instruction in blacksmithing, and steps should be taken at once to have one more commodious and more conveniently situated for the incoming students of another year.

Beginning in a modest way we found it most convenient to give the Mathematics in common to both Arts and Science students, and especially so while the number of students in Science was too limited to make it worth while to hold a separate class for them. But with the increasing numbers matters have changed materially. And as we are now forced to divide our junior class we have found it convenient to separate the Mathematics of the Science student completely from that of the student in Arts. The first division on that line was made in the first year's Mathematics at the beginning of the past session, and the character of the result has completely justified our expectation. Next session the division will be complete throughout the department of Mathematics. Science students will then have eight hours per week in Mathematics in their first year, and six hours per week in the second, or fourteen hours per week in all, as compared with about seven hours per week taken by Arts students. Of course this necessitates a material strengthening of the Mathematical department along the line of greater teaching capacity. How it will be met I am not prepared to say. Mathematics is now the heaviest subject in the whole University, having reached the high limit of about 30 hours per week of teaching, besides numerous exercises and a large amount of extra-mural work.

I wish finally to make a few remarks upon the subject of Astronomy as a part of the Practical Science course. I have been told that Queen's would never have a Department of Astronomy. If this were true I for one should be very sorry. Astronomy is one of the oldest subjects of human thought and as the starting point of both our Science and our Religion, it is surely worthy of study for its historical value alone. But to understand its history it is necessary to know something of descriptive Astronomy. For its character changes so slowly and its foundations are so deeply laid that the whole earthly duration of the human race is but as a moment in the grand ages of the visible Universe. But "never" is a long time; and no one can predict, with any show of certainty, as to what the next 50 or 100 years may bring to Queen's. At any rate some descriptive and practical knowledge of Astronomy is necessary to every fully equipped surveyor and engineer, and if it is not supplied at Queen's students will get it at some other place. Thus far we have been working under great difficulties for want of commodious and comfortable quarters. And I hope that this will be attended to in the near future.

The Transit Instrument which we have for a long time past been using was borrowed from the Royal Astron. Soc. of London in February, 1868, and we should not be surprised that they asked last January that it be returned to the Society's Rooms, or rather Museum I suppose; for it is an old instrument lacking in all modern appliances, and although in some respects serving our purposes, it never supplied our wants. A new and modern transit instrument with all necessary appliances will cost probably somewhat less than \$500. And in conjunction with this, and for its practical use, we need a class-room in which the Sidereal clock and other instruments are kept, and where a class of 40 or 50 students may work out the results of such observations as they are required to make.

I have only to add that the "Faculty of Practical Science," which was in a way formally constituted at the beginning of the past Session, has worked harmoniously and satisfactorily for the best interests of the department under its jurisdiction. Particularly it has established two new courses, one in Chemical Engineering leading to the degree of B.Sc., and a combined course of Science and Medical subjects, so arranged that while not in any way reducing the efficiency of the Science course which leads to the degree of B.Sc., it yet enables the good student to obtain the additional degree of M.D. at the complete expiration of 6 years. Both of these courses have been approved by the Senate.

N. F. DUPUIS,
Dean of Practical Science Faculty.

SCHOOL OF MINING ANNUAL REPORT.

Revenue and Expenditure, 1901-2.

EXPENDITURE.

Salaries.....	\$19,258 07
Rent.....	2,750 00
Fuel, gas expense.....	1,594 53
Chemistry Dept.....	1,008 49
Mineralogy.....	138 41
Geology.....	426 10
Mining.....	435 57
Engineering.....	239 44
Drawing.....	70 10
Library.....	513 32
Mechanical Laboratory.....	742 48
Physics Department.....	4 07
Advertising and Printing.....	404 71
Dairy School Building.....	38 16
Scholarships.....	250 00
Testing Ores.....	25 50
Mining Laboratory.....	1,657 85
Survey Department.....	8 27
	\$29,565 07

REVENUE.

Ontario Government.....	\$18,500 00
Fees.....	7,910 02
Testing Ores.....	154 00
J. Douglass, LL.D.....	500 00
Subscriptions.....	1,335 00
Amount overexpended.....	1,166 03
	\$29,565 07

STATEMENT OF AMOUNTS RECEIVED IN SUBSCRIPTIONS FROM APRIL 1ST, 1901, TO
MARCH 31ST, 1902.

E. W. Rathbun, Deseronto.....	\$ 100 00
H. A. Calvin, Kingston.....	100 00

J. S. Haydon, Camden East.....	50 00
Sir Sandford Fleming, Ottawa.....	200 00
R. Crawford, Kingston.....	50 00
B. M. Britton, Kingston.....	10 00
W. B. Dalton, Kingston.....	10 00
D. McIntyre, Kingston.....	10 00
G. M. Macdonnell, Kingston.....	10 00
F. C. Ireland, Kingston.....	10 00
Thos. Mills, Kingston.....	20 00
T. H. Johns, Kingston.....	10 00
Steacey & Steacey, Kingston.....	40 00
R. V. Rogers, Kingston.....	10 00
J. B. Murphy, Kingston.....	40 00
O. Chown, Kingston.....	10 00
Mrs. R. A. Dennistoun, Peterboro.....	10 00
R. M. Dennistoun, Peterboro.....	10 00
W. E. Roxburgh, Norwood.....	10 00
Rev. Dr. R. Campbell, Montreal.....	20 00
A. Barnet, Renfrew.....	100 00
J. Ferguson, Renfrew.....	10 00
G. Gillies, Toronto.....	100 00
J. Dingwall, Cornwall.....	25 00
Hy. Barr, Douglas.....	20 00
Gillies Bros., Ltd., Braeside.....	100 00
J. B. Carruthers, Kingston.....	200 00
Rev. J. Mackie, Kingston.....	10 00
Rev. G. M. Milligan, Toronto.....	10 00
E. J. B. Pense, Kingston.....	20 00
A. Shortt, Kingston.....	10 00
Total.....	\$1,335 00

REPORT OF THE DIRECTOR.

In presenting the report of the ninth session of the School of Mining, I wish in the first place to call your attention to the fact that the School has passed the century mark in the number of engineering students. The total number of students registered in engineering courses was 105, an advance of fifty per cent. on the attendance of last session. Fortunately, the increase in the numbers of students in other courses was not so great, otherwise the crowding of classrooms and laboratories would have been intolerable. The following statement shows the total attendance:

In Mining Engineering.....	82
In other Engineering Courses:	
Civil.....	5
Electrical.....	10
Mechanical.....	2

Special.....	6
In other Courses.....	169

Total number registered.....	274
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It will not be out of place to record here the chief factors of the rapid growth of the School of Mining. When the Report of the Commissioners on the mineral resources of Ontario was published in 1890, there was nothing being done for the education of the mining engineer. We have this on the authority of the Principal of the Toronto School of Practical Science, who says in his evidence, 'Nearly all of the students who have taken the course with us are engaged in railways, canals, and on city work. I do not know of any that are employed in mining.' The attention of the commissioners was repeatedly called to the necessity of a mining school in the Province. In fact, the majority of those who gave evidence (and whose evidence is recorded, mentioned this, and also the necessity for giving instruction to prospectors and miners, and for encouraging the study of mineralogy and geology by placing small collections of rocks and minerals in favourable places and by teaching the elements of these subjects in the high schools. This was the burden of the evidence of miners, men of business and professional men. It was a clear, unmistakable statement of the needs of the country. It was before the country for the consideration of those interested in education, and in the development of the Province's resources; but no action was taken until this Board in 1893, seeing the gap to be filled, resolved to establish a School of Mining in Kingston. The success of the School was ensured by the fact that its work was from the beginning of its history so laid out as to cover the ground indicated by the Report of 1890. The staff got into close touch with the mining and prospecting populations and has always kept in touch. We have thus learned in the surest way what kind of instruction is needed. A great deal of rough and ready work has been done—the kind of work which appeals to rough and ready men. But the School has steadily raised the standard of mining education, until at this date, in a first year class of forty, there are seven University Arts graduates, twenty-one Junior and six Senior Matriculants. Among the fourteen graduates of this year, there are five Arts graduates, each of whom has thus spent from six to eight years at the University. Six of these graduates have submitted theses showing original work of a creditable character. Every man of the fourteen has spent at least one summer, and most of them three, in exploring, mining, or other practical work. Our students do this as a matter of course. It has become a tradition of the School.

The attendance of regular students on the classes in the Department of Geology has been considerably larger during the past session than in any former one. This has entailed much more work, especially in the laboratory instruction, as our facilities are such that we cannot accommodate all the members of the class at one hour. Indeed, it has been found necessary to subdivide the third year class into four divisions for work in the laboratory.

Through the grant which the Governors made at their last annual meeting, we were enabled to purchase five petrographical microscopes in Europe during last summer, and received them before the opening of the session. Had we not received this additional equipment, we should have had to work under great difficulties owing to the increase in number of students in the third year class over that of last session. As it is, our accommodation is taxed to its utmost, and it is to be regretted that it was not found possible to have the new Mineralogy-Geology building completed for the opening of the session 1902-3. Not only is our class-room capacity taxed, but our museum space has become so limited that during the last two or three years Professor Miller has not tried to increase his collection except by the addition of specimens which have been used in connection with official reports. Much material is boxed ready for being arranged in the new museum which will be ready for the session 1903-4. It is stated that the museum space in the new building is so large that we shall never get it filled with specimens. There is no danger of this. In Professor Nicol we have a man who is unsurpassed as a collector and arranger of specimens. He has already got together one of the finest mineral collections in the Dominion; and would have made it much larger had the museum space been sufficient. He has not only secured specimens from most of the prominent mineral localities in Canada, but is carrying on exchanges with scientific men living in remote parts of the United States and Europe. Recently, he has arranged exchanges so as to secure specimens from Asia, Africa and some of the far distant islands of the Southern Pacific Ocean. We need these foreign specimens not only for educational purposes but for economic reasons as well. We cannot tell what minerals of commercial value are lying hidden in unexplored or roughly examined regions of our own country.

Moreover, much museum space is needed if we are to have all the more important Ontario localities represented by specimens. This is important not only for our students, but will be found to be of great assistance to investors. Men often visit the School to enquire where they can find certain minerals in Ontario, and in time we hope not only to be able to name localities but to show specimens from them.

We also hope to make the museum an attraction to the visitor and the tourist, who doubtless will come here in increasing numbers as the years go by. A good museum should be of much benefit to the city.

Several of our graduates and advanced students spent last summer in geological field work and if the supply of experienced men had been larger, places could have been found for more.

The demand for experienced field men is likely to increase, as Canada has much unexplored territory which is only just beginning to attract attention. However, as our students are increasing in numbers, we hope to be able to fill most of the vacancies arising.

Professor Müller spent over four months of his time in the field last summer. Parts of May, June and July were taken up with investigations on the Eastern Ontario Gold Belt which stretches from the eastern boundary of Peterboro County north-east across Hastings, Lennox and Addington, and Frontenac, a distance of about 70 miles. Very important mining work is now being quietly done on this belt with very encouraging results. The companies who are doing the work are close corporations and have not taken part in any of the "wildcat" schemes which have brought disaster to some parts of Canada. It is believed that the public have been taught a severe lesson, owing largely to their own folly in investing on the advice of any fakirs who came along, and that mining in all parts of Canada is now being carried on chiefly by persons who are engaged in it as a legitimate enterprise. There is no enterprise which is more legitimate and few in which the risk is less than mining, where it is under the direction of properly trained men, such as we hope our graduates will be when they have had a few years experience.

A part of New Ontario received attention during the latter part of July, August and September. The district referred to lies just south of the height of land and north of Lake Temiscaming in the district of Nipissing, and is bounded on the east by the Province of Quebec. The southern part of this district is being rapidly filled with settlers. Some four or five townships, each six miles on a side, were taken up last summer. The land is believed to be as well suited to agriculture as most parts of old Ontario. Arable areas were found here and there up to the height of land, and large areas of good land are known to lie north of this, and spread out towards James' Bay. There is every indication that this little known part of the Province will at no distant date support a large population. Railway facilities, which will be provided in a couple of years, are all it needs to attract settlers in large numbers, even in the more distant parts. The work in this district was of a preliminary character. A large part of the travelling was done through territory of which there is no map of any

kind. The rocks examined in the more northern portions form ridges which rise, at times some distance apart, through the soil. A considerable variety was found in the geology, indicating the likelihood that the district will in the future be of importance as a mining field, as well as of great agricultural productiveness.

The work in the mining laboratory has been given a local interest by an investigation of the zinc ore now being taken out near Parham. In this investigation some of the new concentrating machinery has been used with excellent results. Several of the graduating class took part in this research. It is a fortunate circumstance for the School of Mining that it has been placed in what is rapidly becoming a mining region.

Mining Engineers must know how to use electrical and other machines. Professor Gill has organized this department of study with great energy and ingenuity. The completion of the Engineering building next autumn will make it necessary to provide equipment for the electrical and mechanical engineering laboratories. At the last annual meeting, it was decided to raise a sum of \$50,000 to equip the new buildings.

The classes in surveying are now so large that it is impossible for one man to give them the practical instruction in an efficient way.

Owing to the large number of students doing advanced laboratory work in chemistry, it was found necessary at the beginning of the session to furnish the water analysis room with students' work places, so as to provide room for the overflow from the quantitative laboratory. Every work place in the four laboratories was occupied last session, and if there are more students in this department next session, it is hard to see how we are going to make room for them. When the departments of Mineralogy and Geology are removed to the new building, the whole of the top storey will be vacant and the much needed laboratory space can be found there.

Your Director had last summer excellent opportunities of comparing our students with those of other colleges. They worked side by side in the summer mining classes, and it will gratify my colleagues to know that their men outdid all others in the precision and rapidity with which they identified minerals. I found our students working in most of the mines visited, and they were all as usual advertising their Alma Mater. The two Kingston & Pembroke Survey parties were made up almost altogether of our undergraduates, and that their work is satisfactory is shown by the fact that a Bay of Quinte Railway Survey party, made up of our men, starts out to-day.

The Report of the Commissioners on Forestry has been before the country for several years. That report makes clear the necessity

for education in this subject. The Board of Governors took the first step in this direction last winter, in bringing here Professor Fernow, of the New York College of Forestry, to lecture and to take part in a conference on this very important subject. Here is another gap in the educational system of the Province. It is in order now for the School of Mining and Agriculture to fill it. The outlook for the success of a college of Forestry here is quite as promising as was that for a School of Mining in 1893. The situation is very much the same; and similar methods carefully planned and energetically pursued will ensure its success.

I congratulate the Board of Governors and Subscribers on the completion of this stage of the development of our School. I say 'this stage' because I believe, with the completion of the new buildings and the additions to the staff and equipment, the School of Mining will begin its second stage, which will finally lead it to the position of School of Practical Science for Eastern Ontario in particular and for Canada in general.

W. L. GOODWIN.

TWO RECENT VOLUMES OF PROPHETIC LITERATURE.

*I. The "Temple," Isaiah, edited by the late Professor
A. B. Davidson.*

A PATHETIC personal interest attaches to the volume on Isaiah in the Temple Bible Series; on opening it our attention is arrested by the "In Memoriam" page from the pen of the general editor, which, speaking of the preparation of the book, says: "It was completed and despatched to me on the evening before the swift and sudden summons came from his Lord to go forth to meet Him." The present writer was not personally acquainted with Dr. Davidson, but those of us who take a special interest in Old Testament studies feel that in a sense we have known this distinguished scholar through his writings and by means of his students. In this brief article it is not intended to attempt another biographical sketch, or even to give a full review or adequate appreciation of this small volume. It will be sufficient to point out the significance of Dr. Davidson's latest contribution. In his selection of a scholar to supply a short introduction, and very brief notes on the book of Isaiah, the general editor of this series was fortunate in securing the services of the distinguished Scotch professor. Mr. Sayce and his treatment of Genesis in the

same series, is another story with which we are not now concerned. We confine ourselves to one question, viz., what can the student learn from this modest volume as to Dr. Davidson's final position with regard to the analysis of this particular book of prophecies?

The "Temple" Isaiah has an introduction covering twenty-two small pages, and thirty-five pages of brief suggestive notes based upon the authorized version. As to the text the only improvement upon the authorized version is the printing of passages in the form which shows more clearly their poetic structure. The introduction, as one might expect, is a marvel of clearness, neatness and condensation. The "critical questions" are not obtruded, but in such a case they could not be avoided, even in a volume intended for the general reader; they are, however, treated in such a brief manner that only those who are well acquainted with the fierce discussions that have raged around this book will realize all that is implied in Dr. Davidson's concessions to the advancing analytic movement. Those who are deeply interested in the questions and know how to seek for it will find very much information packed up in small compass in various parts of the "Temple" Isaiah.

Fifty years ago the Rev. George Gilfillan, who was in his own way a literary critic though evidently untouched by what is now called "the higher criticism," made the following statement—let the present generation of students please note that the joke about sawing Isaiah asunder is not new now whatever it may have been in the year 1851—"Tradition—whether truly or not, we cannot decide—asserts that 698 years before Christ, Isaiah was sawn asunder. Cruel close to such a career! Harsh reply, this sawing asunder, to all those sweet and noble minstrelsies. German critics have recently sought to *imitate the operation*, to cut our present Isaiah into two. To halve a body is easy; it is not quite so easy to divide a soul and spirit in sunder. Isaiah himself spurns such an attempt. The same mind is manifest in all parts of the prophecy. Two suns in one sky were as credible as two such flaming phenomena as Isaiah. No! it is one voice which cries out at the "Hear, O heavens, and give ear, O earth," and which closes the book with the promise: "And it shall come to pass, that from one new moon to another, and from one Sabbath to another, shall all flesh come and worship before me, saith the Lord."

This is the traditional view of the composition of the book vigorously and dogmatically stated. It is useful now as helping us to realize how far we have moved in a different direction. Dr. Davidson was a grammarian, a literary critic and a theologian, so that he possessed the important qualifications for handling the problems involved in a

discussion of the structure of the book of Isaiah. Had he been spared to complete the large commentary promised in the International Series, it would have been interesting to see how he would have treated the questions, numerous and difficult, raised by Cheyne, Duhm, Giesebrecht, Meinhold, Marti and others, for it is one thing to write a caustic review at the expense of "extremists," quite another to meet the particular problems point by point. Professor Davidson was noted for his fine combination of criticism and conservatism; in fact, as is well known, if error was unavoidable, he preferred to err on the side of caution.

Let us sum up briefly the main results.

(1) It has long been held by a large body of scholars that the section of the book beginning at chapter XL, "Comfort ye my people," etc., could not possibly be from the pen of the original Isaiah of Jerusalem, who exercised his ministry between 740 and 700 B.C., but was contributed by a much later writer in the days of the Babylonian captivity. Dr. Davidson gives a brief, clear summary of the arguments in favor of this view; this, of course, was to be expected, but the significant point at this juncture is contained in the words: "Chaps. LVI-LXVI may, in parts at least, reveal a different situation, that is, while Chaps. XL-LV seem addressed to the people in captivity in Babylon, Chaps. LVI-LXVI may presuppose a people settled in Judea, or in other words, a people partially returned from exile." That is, there is not only the exilic section known as "Deutero-Isaiah," but also a later section called by Duhm in his commentary (1892) "Trito-Isaiah."

(2) This disposes of twenty-six out of sixty-six chapters, removing them to a period from one hundred and fifty to two hundred and fifty years later than the time of Isaiah. What then is to be said about the historical section XXXVI-XXXIX? "The passage is taken with some variations, from the Book of Kings, and resembles the histories of Elijah and Elisha preserved in that book."

(3) Proceeding in our journey from the end of the book to its beginning we meet next Chaps. XXXIV and XXXV. We consult again the introduction and read, "XXVIII-XXXV. Chap. XXVII, 8 ff. is a collection of Isaiah's prophecies belonging to the Sennacherib period (701-701). The collection was probably made by the prophet himself (XXX, 8). It contains many glimpses of the final felicity and peace when the Assyrian terror shall be only a memory; and a more formal vision of the end (chaps. XXXIV-XXXV) has been appended to it." Just so! "appended to it." but when and by whom? Why should it be necessary to go to the other end of the volume to find this brief note? "(Chaps. XXXIV-XXXV) Date, the exilic,

or possibly *post*-exilic period." Another sentence in the introduction at this point would have completed the matter and informed the average reader that in the view of the editor this appendix to the Isaianic group of oracles may belong to a time two centuries later than the rest of this section.

(4) This separation of important parts of the same statement is adopted in other cases as we shall see. Take another example. In the introduction we read "Chaps. XIII-XXIII are occupied with the destinies of individual nations; chaps. XXIV-XXVII is a vision of the destiny of the universal heathen world and of the consummation of the Kingdom of God." Turning to the notes at the end of the volume we find this further statement, "Vision of a universal judgment upon the earth for its sin, especially its bloodshed. The judgment is, at the same time, deliverance for the righteous. Interspersed are a number of hymns of thanksgiving for redemption. The date is *post*-exilic; the events that suggested the prophecy are uncertain." Thus we meet in the middle of the first half of the book, four chapters which belong to the later apocalyptic literature. Of the prophecies on foreign nations (XIII-XXIII) we are told that "The prophecies are miscellaneous and of very different dates, but the heading 'Oracle' (A. V. Burden, Heb. Massa) common to most of them, seems to show that they form a distinct collection." (Introduction X.) Then in the notes this general statement is supplemented as follows, "'Oracle on Babylon,' etc.; these headings, like those to the Psalms, are due to the collectors and are of no authority in regard to authorship. Babylon fell before the Medes, 539. The author is an unknown prophet of the exile." (p. 186.)

(5) This brings us to the first main division of the Book of Isaiah, chaps. I-XII. "Chaps. I-XII prophecies on Judah and Jerusalem. There are probably several small collections, such as II-IV embraced in this larger section." (Introduction IX.) Even here it seems we cannot say that "the collection" is from the hand of Isaiah. "The beautiful hymn that closes the collection, chaps. I-XII, contains quotations from other hymns and psalms, some of them later than Isaiah's time." Some of us have been very much interested in II 1-4. We would like to know just where to place this significant passage, it seems likely that the particular form of the missionary idea embodied in it is much later than the time of Isaiah. Dr. G. A. Smith, in his first volume on Isaiah, had a fine homiletic arrangement of chapter II. The Idealist—The Realist—The Prophet. This assumed that verses 1-4 of the chapter were by Isaiah when he was a young man, youth being

the "idealistic" period of life. But when Dr. Smith came to deal with the same passages in Micah he held fast to the possibility of a date at the end of the eighth century, but conceded that if by Isaiah it was written in his old age. Dr. Davidson touches this question in his notes thus: "II, 1-4, is found also in Micah IV 1-4; it was assigned by some collectors to Isaiah and by others to Micah." This is sufficiently non-committal, in fact from the modern point of view the second half of the sentence is merely a restatement of the fact contained in the first half of the same sentence.

(6) One of the unsettled questions in Isaiah criticism relates to the authorship of the beautiful Messianic passages in chapters IX and XI. Dr. Davidson took, as we might expect, the more conservative view. In a similar connection he makes this suggestive statement: "It is difficult with the present text of chaps. VII-VIII to interpret Immanuel of anyone but the Messiah, the final King of Jehovah's people." "Present text" may not mean much to the ordinary reader—to the special student it seems to imply that there may be something in the contention of "advanced critics" that the original text has been worked over in the Messianic interest. Otherwise it is difficult to explain why our author uses the phrase "present text."

This very brief review will show how far Dr. Davidson had travelled from the position represented by another Scotch professor who has published a book under the peculiar title "Isaiah One and His Book One." During the last session an "English Bible Class" was conducted in Queen's University, in which the important section XL-LV was selected for special study. This was pursued on the basis of an analysis of the whole book similar to that revealed by the present review. The lecturer was convinced that if the teaching of the book was to be made available for the English reader this could only be done on the lines worked out by the special scholarship of the last century which has now achieved a large body of results accepted by those who have most thoroughly qualified themselves to give a competent judgment. On these lines we can now give something like a real and adequate interpretation of this compilation of prophetic literature, a large field is thus prepared for the student of history as well as for the preacher. These matters are not settled by the authority of great names, but in measuring the significance of Dr. Davidson's last deliverance on a subject that had occupied his attention for almost half a century, added weight is derived from the fact that the statement comes from a competent scholar who was never suspected of running after novelties, and whose influence throughout a long and influential career was steadily exerted against a too hasty adoption of new theories. There is however no need for

alarm, Isaiah is not lost, but rather found, in a very real sense; the student who will in the meantime confine himself to those passages which have survived the severest scrutiny will gain, for the first time, a clear view of the life and teaching of that remarkable man who is in some respects the greatest of the prophets.

II. The Theology and Ethics of the Hebrews, by Archibald Duff, M.A., LL.B., B.D., Professor of Old Testament Theology in the Yorkshire United Independent College, Bradford, England. (Charles Scribner's Sons, New York.)

This book is of the other kind, instead of severe self-restraint we have enthusiasm and abandon. Referring to Dr. Davidson's criticism of a former volume, Professor Duff said: "One reviewer who is the revered Nestor of Scottish work on the Old Testament, rebuked the writer as too much swayed by feeling. We should be glad to receive ere long a work on the subject of these volumes from that honoured hand itself! But while we wait something must be done" (Old Testament Theology, Vol. II, Preface). Alas, "that honoured hand" is now still and the task of issuing the material partially prepared is left to another. As what we require now is not a new dogmatism, but free and independent study of the ancient documents, we welcome contributions from all classes of earnest workers. The present writer can testify from personal experience to Professor Duff's boundless energy and pure enthusiasm as a teacher, as well as to the fact that he has done noble pioneer work in England in the way of presenting in a vivid fashion the results of advanced scholarship. The volume before us is the third from his hand on this subject, and recently he has added to the list of his works a small useful text-book on Hebrew grammar. The author in the present case had to work under strict limitations as to space, and we must admit that the subject cannot receive full treatment in a small volume of less than three hundred pages. That, however, is one disadvantage of taking part in "a series" of volumes of uniform size and price. The plan pursued then is to give a slight sketch of "Early Hebrew Life, its Religion and Morals," to furnish summaries of the Elohist Yahvist and Deuteronomic documents and to put the main strength of the exposition on the prophetic writings and particularly those of the eighth century. The first four chapters are very brief and are full of debatable points, so that they will hardly be of great service to those who are not already acquainted with discussions concerning the origin of Hebrew Nationality and Religion. A view of the origin of Deuteronomy is expounded which will be quite new to the great body

of English readers, at present it can only be described as an ingenious hypothesis for the solution of a difficult problem. The author also accepts the view of Kusters and Torrey, that there was no return from the Exile, that in fact the deported people of Judah were "lost" in the same sense as the Israelites were lost more than a century before. Seeing that the book contains so many positions that are not yet very largely accepted even by advanced students, it will at once be evident that a detailed criticism in brief is impossible. Their presentation in this form will probably stimulate discussion and in that way lead to their rejection or confirmation. The most suggestive and helpful part of the book for the average student is the treatment of the prophets; "The Prophets of Goodness" and "The Formal Doctrinal Teachers." Post-exilic Judaism is not expounded, the book closes with what the writer regards as the culmination of Hebrew Theology in the "Four-slave songs now found in Isaiah." He treats the problem of suffering as the great question raised by the Exile and arranges the answers thus: (1) The answer of the writers of the Book of Job. (2) The answer of the Holiness Law. (3) The answer of Ezekiel. (4) The answers in the "Comfort Poem" in Isaiah. With regard to Old Testament Theology or the History of Hebrew Religion, as Dr. Duff says, something must be done, the reconstruction cannot wait forever and we are thankful to the men who push on in front even if in their scouting they sometimes run up blind alleys or attempt impossible paths. The great thing is to avoid trifling and to hold fast to the faith that the truth can do us no harm and cannot itself be harmed by free vigorous discussion.

W. G. JORDAN.

CURRENT EVENTS.

THE conference of Canadian Boards of Trade which lately met at Toronto was the expression of a happy conception admirably carried out. One might, indeed, have foretold that those who looked for something of immediate importance to result, were doomed to disappointment. Such a conference must be regarded simply as the beginning of wisdom, not the end of it. It would be unjust, alike to the conference and to the rest of the country, to regard it as representative of Canadian interests in general, though it might have been more representative than it actually was. It was simply a meeting of shrewd business men, representing concrete business interests in Canada, who had come together to discuss, from their point of view, the relations of Canada and the Empire. The value of the conference to the country lay, not in what it immediately achieved, but in the fact that it was the beginning of what we may hope will be a series of such gatherings, which must be of great educational value to those taking part in them, and through them to the rest of the country. Brought face to face with a variety of concrete, yet one-sided views, men of strong practical sense must, on reflection, be brought to take a wider view both of their own field of action and of the interests and activities of other national factors.

The Recent
Trade
Conference.

To the impartial onlooker the most encouraging feature in the conference was the strong tone of confidence in Canada and its future; and the chief defect was the apparent failure of most of the members to treat in a broad and sympathetic manner the important questions brought before them. Though the chief object of the conference was to consider trade relations within the Empire, and the possibility of developing an imperial commercial policy, yet the most striking feature of the meeting was the very general disregard of all interests and points of view but those of Canada. Indeed most matters discussed seemed to be regarded from the standpoint of local interests, which, so far from being imperial in their scope, were seldom even broadly Canadian. Even where there was an apparent unanimity of view, as in the matter of maintaining a high protective tariff, or in that of urging Britain to undertake the preferential treatment of Canadian imports, the unanimity was plainly not the result of a reasoned conviction as to what would really be to the advantage of Canada as a whole. It was simply the result of the accidental coincidence of special private interests which, if followed out into particulars, would soon have developed numerous antagonisms, as where, for instance, the protection of one industry meant the sacrifice of others.

This was brought out very clearly in the discussion on transportation routes and maritime ports; one of the few subjects which went deep enough to uncover sectional interests. The Maritime Provinces and their chief cities were quite unanimous in urging that Canadian ports alone should be favored with Canadian export and import trade. This position they were able to support with all the stock rhetoric commonly used in support of building up one's own country to the exclusion of all others. But the representatives from Ontario and the west soon disposed of these claims, and conclusively showed how disastrous to their interests any such policy would prove. Though the Maritime Provinces were quite united in support of common local interests, yet had the matter of routes and ports been gone into a little more fully we should soon have found the representatives of Halifax and St. John parting company, owing to the uncovering of still narrower local interests. There being at the conference no representatives from Britain, or the other colonies, their interests and points of view were as completely ignored as those of Western Canada would have been in the Maritime Provinces, or *vice versa*. It is true that an individual here and there ventured to suggest that the British people might view the matters under discussion in quite a different light, but these were voices in the wilderness, having no immediate influence. Whatever the platitudes with which they introduced their remarks, most of the speakers simply dealt with the question of trade between Canada and Britain from the point of view of the business man who asks himself, with reference to any business proposition, "How much shall I be able to make out of it?" This attitude, which is legitimate enough for the business man in his private dealings, is far from broad enough when we come to discuss the interests of the Empire. The difficulties of an imperial policy will never be faced or overcome by those who cannot see in that policy any interests but their own. The Empire evidently appears to several devoted admirers of it as something which we can steadily milk for our own benefit, instead of as something which has to be maintained by constant sacrifices.

A much longer experience in dealing with a variety of outside points of view has led a large number of the more intelligent classes in Britain to take a sympathetic view of her relations to the world at large, including the colonies. Yet on the British side too, we find a strong conviction, similar in kind though opposite in interest to that which is, more excusably perhaps, so common in Canada. A very prevalent form of this one-sided British view is fairly represented by Mr. Chamberlain, whose singular incapacity to see more than one aspect of a subject at a time has enabled

Opposite
Points
of View.

him to be at once so successful a leader of the less enlightened elements of the British public, and, in the words of Lord Rosebery, so excellent a judge of recantations. When summed up, Mr. Chamberlain's recent deliverances on the subject of commercial relations with the colonies practically amount to this. Britain is face to face with a new and dangerous commercial situation. Countries whose competition at one time she did not fear, notably the United States and Germany, are now rapidly overtaking her in the commercial race. Should they succeed in driving her from neutral foreign markets, they may even seek to rob her of her colonial trade as well. Driven from the world at large by heartless competitors, she must prepare for herself a close preserve within her colonial Empire, where she may enjoy a protected market for the goods of those manufacturing industries by which alone she lives. The colonies will, obviously, expect some favors in return for reserving their markets for the mother country. Hence, the food products and other raw materials of the colonies should be given a preference in the British markets. Thus in time the colonies will supply Britain with the greater part of her raw materials, and her industries will supply the colonies with the greater part of their manufactured goods. Here we have a simple and permanent policy of mutual advantage. Then, by organizing the military resources of the colonies, Britain may continue to add, by strictly defensive warfare, new regions to this close corporation, enlarging both her supplies of raw material and her markets for finished goods. This ideal has the merit of being neither visionary nor untried. It is simply the Seventeenth and Eighteenth Century conception of a colonial empire, wherein the mother country entirely reserved the markets of the colonies for her own manufactured goods, and in turn gave the colonial raw materials a preference in her markets, even prohibiting some of them from being sent elsewhere. No doubt Mr. Chamberlain would not at present propose that the colonies should be prohibited, as of yore, from making any articles for themselves that could be manufactured in Britain. But the scheme evidently anticipates that the colonies would not, or could not compete with the mother country in the production of such articles. If the colonies insisted upon manufacturing for themselves, where would Britain sell her goods? And if she could not sell her goods, how could she buy colonial food and raw materials?

Judged from a purely British point of view, Mr. Chamberlain's ideal, which evidently finds favor with a large number of Englishmen, is not at all unreasonable. Indeed a very plausible and coherent, even if one-sided argument, can be mustered in support of it. Yet the members of the Toronto conference evidently had not the

slightest sympathy with any such plan of imperial commercial relations. When they advocated a preferential treatment of Canadian produce in the British markets, what they saw was this. The preference if generous would probably increase steadily the number of Canadian consumers and give them more to spend. This would afford a growing market for the goods of Canadian manufacturers and tradesmen, provided only that it can be reserved for their benefit. To that end they are strongly in favor of a high protective tariff on imports of manufactured goods. If it is asked what concession we are willing to grant to Britain in return for the immense favor of burdening, at present at least, five-sixths of her trade for our benefit, the answer is not very clear or satisfying, and in no case so plausible as Mr. Chamberlain's. In the first place there seems to be a very general conviction that it should be sufficient consolation to the truly imperialistic Britisher for his extra outlay on colonial produce, that at some time in the future he may live upon colonial produce alone. By steadily supporting colonial prices, the colonies would gradually fill up, with foreigners, doubtless, but still fill up, and ultimately send him all that he requires. Then he will be able to proudly expand his imperial breast and say to himself, "These imports were all produced within the British Empire, I am in no way dependent upon the foreigner—except for the sale of my own goods." Meantime, however, since this happy vision of the future might not satisfy the short-sighted Briton, some such concession as the following would not be unreasonable. First give to the Canadian manufacturers a sufficiently high tariff to protect them from any effective competition on the part of British goods. Then an extra tariff, the higher the better, may be placed upon manufactured goods from foreign countries. Relatively this will appear as a preference in favor of the British manufacturer, and incidently it will be an extra protection to the home manufacturer. As to Imperial Defence, the Canadian manufacturer would not object to still further protection for that purpose, but the funds should be spent by our own Government. If the Canadian manufacturer and tradesman do not take from the Canadian agriculturist more than the extra value given him by the British consumer, then, looked at from the point of view of Canadian interests alone, there is undoubtedly reason in this policy, though in that respect it is much inferior to Mr. Chamberlain's. Indeed, so long as every section of the Empire confines its attention to the contemplation of the beauties and advantages of its own proposals for an imperial policy, everything goes merrily. The unfortunate individual in any section, who permits his mind to stray to other points of view, and thereby acquires and harbors doubts, is plainly a croaking pessimist, if not a down-

right traitor. Yet when any attempt is made to bring these policies into contact, difficulty at once arises. Each one sees in the proposals of the others but selfishness and perversity. They cannot understand why people otherwise so sensible and patriotic, should be so blind to the only means by which the glorious ideal of Imperialism can be realized.

What, then, is the remedy for all this confusion and cross-purpose? Simply an honest facing of all sides of the large and complex questions which are raised by apparently simple proposals for an imperial commercial policy. We strongly suspect that such a frank facing of the situation will prove that no single commercial policy for the Empire is at all possible, without greatly interfering with the normal trade relations and prosperity of each part. So far as trade relations between the various parts of the Empire are mutually beneficial, they should require no coercive stimulus. An improved knowledge of each other's needs and resources, and therefore an improved means of communication, physical and spiritual, are all that can be provided in advance. If free and enlightened enterprise cannot accomplish the rest, the situation is indeed past saving. But we are far from that condition. Canada in particular is filling up rapidly enough, without any artificial inducements, and we have already a larger and freer field for our products in Britain than she has for hers in Canada. From every point of view we have no occasion to depend on charity either within or without the Empire.

The levying of a tax upon grain, flour, and other cereal foods, by the British Government, has caused no end of discussion, alike in Britain, the colonies and foreign countries. The unusually lame and inconsistent defence of the duty, made by the Chancellor of the Exchequer, Sir M. Hicks-Beach, goes far to confirm a common opinion in Britain that this particular form of taxation was forced upon him by certain other elements in the Cabinet. Yet, looked at from a purely fiscal point of view and in relation to the occasion for new taxation, there is nothing very objectionable in the duty. The common people of Britain, who are at all temperate in their habits, have been for a long time remarkably free from the national burdens of taxation. The war, whose immense cost is the occasion of the new taxation, was very largely a people's war. Had not the ignorant and thoughtless masses so vehemently applauded Mr. Chamberlain's 'shirt-sleeves' diplomacy, patience, wisdom, and time would in all probabil-

The British
Grain
Tax.

ity have enabled the Government to avoid the conflict. But, in any case, the non-taxpaying masses were in a rabidly jingoistic spirit, and it is only common, as well as poetic justice that they should assist in bearing the consequences. That the tax is an evil is quite true, but modern war is a terribly expensive luxury. Here, under ordinary circumstances, the discussion of the food tax might end. But the great historic struggle for free trade in Britain, which resulted in the development of her phenomenal prosperity during the latter half of the nineteenth century, was more closely associated with the abolition of the corn laws than with any other remedy. Hence, though a duty of six cents per hundredweight is a very mild corn law, yet the re-introduction of that ill-omened system, even in the mildest form, is regarded by many with the utmost apprehension. Sir M. Hicks-Beach and the more stable section of the Cabinet protest most strenuously that the duty is intended solely as a revenue measure, and is therefore in no way associated with any attempt to introduce protective or preferential measures. But the friends of free trade, while not doubting the honesty of these assurances as regards the parties who give them, are not altogether relieved. They find the advocates of protection and preferences, who increase in numbers as British economic efficiency and enterprise show signs of decay, loudly claiming that this new departure in taxation is but the beginning of a regular protective policy. And their alarm is not diminished when they find the Colonial Secretary outlining a scheme of preferential trade, by which the tax may be still further increased on foreign and altogether remitted on colonial grain. This would be beneficial to the colonies in proportion as it became a burden to the British consumer and a loss to the British Treasury. The increased price in the British markets, due to the tax, will be paid by the British people. The increase on foreign grain will go to the British Treasury, the increase on colonial grain will go to the people of the colonies. That an increasing proportion of the imported grain may come from the colonies will not affect the price for the British consumer, but will steadily lower the British revenue, and additional taxes may be required to fill the gap. But, it has been asked, may not the foreigner pay the duty? He may have to bear part of the duty if the tax is made heavy enough. Britain being the largest single world market for food, if the tax is made heavy enough to force a considerable section of the population to use less food, the British market for food will be lessened, and the corresponding over-supply in the world's markets, as compared with normal conditions, will bring down the price somewhat. To that extent the foreigner will pay part of the duty, but all other food-importing countries will enjoy the same reduction in price. So long, however,

as the British duty does not force people to limit their consumption of food to any appreciable extent, there will be no reaction on supply and hence the consumer will pay the duty.

Britain has been so long a free-trade country that the British public seem to have lost sight of the real grounds for the wisdom of that policy. Hence in the suddenly renewed discussion of the subject we find protectionists and free-traders alike using the most absurd arguments in support of their respective views. One would gather from some of the arguments of over-zealous free-traders, that the present trifling tax per head of the population was going to reproduce some of the disastrous effects of the old corn laws. On turning to some of the rhapsodies of the protectionists and preferential traders, one would suppose that the same slight tax was going to revolutionize the British food supply and cause the Empire to flourish at the expense of the world. Both styles of argument indicate the real danger in the tax. On the one hand, people will find that the tax in practice is far from being so oppressive as the unwise free-traders have predicted. Thus free trade will tend to be discredited and its real importance overlooked. On the other hand, the ill-informed and the personally interested advocates of protection, convincing themselves and others of its virtues, will naturally clamor for the conversion of a revenue tax into a protective tariff by raising the rate and extending the list of articles to be taxed. Every country has had experience of the remarkable ease of the descent into the quagmire of protective tariffs, bounties, bonuses, subsidies, and other efforts of a people to enrich themselves by taxing one another. Britain alone has gone through the arduous labor of extricating herself from that predicament. Her freedom from the burdens of conscription and a protective tariff, has long been the envy of Europe. To voluntarily adopt a protective policy would be to despair of her future and to formally abdicate her leadership in industry and commerce.

The strong under-current of nervous distrust as to the wisdom of their imperial policy of late, is nowhere more strongly manifested by the British public, and the press which mirrors its feelings, than in the highly exalted position to which they have united in raising Mr. J. P. Morgan. Not for many years has any single person, however high his rank or powerful his influence, been able to cause such a radical alarm among otherwise sensible Britishers, as this same Morgan. After unheard-of exertions on the part of the whole Empire, and the squandering of as much na-

The
Shipping
Combine.

tional treasure and blood as would have built and manned a dozen commercial fleets, Britain has added the Boer Republics to her Empire, and was hoping for a little respite in which to calm her nerves and adjust her back to a prolonged burden of new taxation. But, while Mr. Chamberlain's billion-dollar army was gently pressing upon the benighted Boer the blessings of British civilization, Mr. Morgan's billion-dollar trust was treacherously taking possession of the core of the British Empire. With overwrought nerves and an uneasy conscience, the British public, like Macbeth at the banquet, have had a vision of the ruthless Morgan occupying their royal seat of naval supremacy. Forgetting the dignity and reserve which should characterize people conscious of just deeds and pure motives, they have lost command of their feelings, and with knocking knees have shrieked at the Morgan apparition, "Avaunt and quit my sight," though they could hardly add, "Thou hast no speculation in those eyes which thou dost glare with." The weapon with which they subdued the Boer is still in their hands, but it is utterly powerless against the ghostly influence of Morgan. The dread spectre stalks about the very streets of London in broad daylight, illuminates the dark recesses of St. Paul's and shakes anything but gory locks from honored seats at regal banquets. Of what avail are colonial contingents, lyddite shells, and bread taxes against Mephistophelian principalities and powers that engulf whole navies before their very eyes. Little wonder that the distracted public cries in alarm, "Take any shape but that, and my firm nerves shall never tremble."

But, metaphor aside, what is the significance of the latest Morgan episode? A full analysis of the situation and its possibilities would take one pretty far afield, but there are certain salient features of it which may be outlined. Mr. Morgan has recognized, among other things, that the United States has at last, thanks to its great natural resources and untrammelled internal development, attained to the position of a great industrial power. No longer dependent upon protective tariffs, or absorbed in the opening up of its own vast territory, it is now becoming a great commercial power, seeking markets the world over. Mr. Morgan has himself been most successfully engaged in introducing that latest and greatest of American labor-saving devices, the great consolidated company, commonly named 'the trust,' and that still later American device 'the community of interest principle,' applied to transportation. Mr. Morgan simply undertook to introduce the new system as a substitute for the wasteful competition of the trans-Atlantic steamship companies. Combining both phases of the system, he managed to establish a great shipping trust, enlarged by arrangements with other lines, on the community of interest prin-

ciple, and thus brought within one combination most of the leading British, American and German Atlantic lines. To do this it appears to have been necessary to allow to the various companies, more than the existing market value of their properties. It yet remains to be seen whether, in the fairly certain event of a shrinkage in the present economic activity of the leading commercial nations, it will be possible for the shipping combine to maintain the dividends and other guaranteed returns upon its stock and contracts. In any case, as is fully recognized by the wiser heads in Britain, there is no special occasion for national alarm in the mere formation of a shipping combine. The great economic interests of the world have long ceased to be merely national, and have been becoming quite rapidly of late international. In this movement Britain itself has so long led the way, that the ordinary Britisher has never quite realized the radical change which has been gradually going on. A movement like the present suddenly brings it home to him, and at a time when he is unusually susceptible to alarming apprehensions as to the national stability. The present British panic recalls a similar situation in the United States when it was discovered, just before the War of 1812, that British capitalists owned much the greater part of the stock of the Bank of the United States—a splendid institution which was the parent of our Canadian system of branch banking. The discovery so alarmed the common people, who fancied they saw their national life-blood at the mercy of their possible enemy, that Congress was forced to abolish the bank, and later to proscribe the system on which it was founded. The result has been that the banking system of the United States is the most inefficient link in their whole economic structure, and their leading bankers have for years been endeavoring to remedy the system and consolidate the banks. There is as little occasion, and less excuse, for the present alarm in Britain over the crystallization of an arrangement which, in a looser form, has been in operation for some years. When foreigners invest in the industries of a country, or in its means of transportation, instead of the investment being a menace to the peace of that country, it is one of the securest pledges towards its preservation. To take an extreme case: why have Britain and other countries, for over half a century past, preserved the scandalous apology for a government in Turkey from its legitimate fate? Largely because their subjects have invested much capital in its public debt. If the people of one city have invested capital in another, they are surely not interested in seeing that other decline in prosperity, much less in seeing it burnt or sacked. Morgan and his American capitalists came to be interested in trans-Atlantic shipping because they were interested in American railroads carrying goods to and from that

shipping in increasing quantities, and passengers in increasing numbers. Now that they have invested their millions in its shipping, they are as much interested in the prosperity of Britain as in that of the United States, for their dividends and the value of their stock will entirely depend upon the expansion of the trade and intercourse between them. There is therefore no more occasion for alarm on the part of Britain in the future, should American capital come to be the chief support of Atlantic shipping, than there has been on the part of the United States in the past, when British capital almost entirely supported it. The important question for the British public is, why should British capital cease to support it? The answer to that will disclose the only occasion for uneasiness. If Britain has turned her back on her policy for the past century, as Mr. Chamberlain seems to indicate, regards the squandering of a billion and a quarter dollars in South Africa as a splendid investment, and proposes to make other splendid investments of a like kind, then, of course, she must withdraw these enormous sums from her former peaceful investments. There being no country which is more rapidly accumulating wealth by a policy which was till lately the pride of Britain, than the United States, it is but natural that that country should come in time to occupy the position of wealth, power and leadership, which Britain is flinging away in a reckless bout of Kiplingism. The deluded imperialist may cherish Napoleonic dreams of universal empire and affect to despise the enterprising Americans as a nation of shop-keepers, but unless he gives heed to the methods and principles which guided his fathers in developing the last and greatest period of Britain's power, his descendants will in time have nothing to grace their fallen estate but the memory of the golden age of their ascendancy in the nineteenth century. However, we have only the symptoms as yet of such a catastrophe, and we have every confidence in the recuperative sanity of British intelligence to throw off the present intermittent attacks of national fever and ague, one day defying a world in arms, and the next quaking before a peaceful capitalist.

Notwithstanding the heroic efforts, during the past two years, to prove the great superiority of war to peace as an aid to the higher civilization, there seems to be a remarkably widespread feeling of relief and satisfaction at the close of the war in South Africa. The people who took no intelligent interest in the merits of the questions at issue, or the wisdom of the diplomacy which preceded the rupture, will naturally drop the whole subject,

Peace in
South
Africa.

having gained no experience that will aid in avoiding another war. But, even to the wayfaring Briton, there should be food for reflection in the fact that never in the whole history of his country has the conduct of its Government before the war, been so universally condemned in foreign countries, not merely by the ignorant rabble, but by the more enlightened classes—the classes whose judgment counts in international public opinion, and in the verdicts of history. The necessity of dwelling on the ante-bellum stage of the matter is all-important, for once the conflict was precipitated there was no possibility of ending it but by the submission of the two republics. And therefore, while many of the most distinguished men of all classes in Britain, and even in the colonies, could admit neither the justice nor the wisdom of Mr. Chamberlain's characteristic methods before the war, very few of them countenanced any stop-the-war movements.

The war having begun, there could not be the slightest doubt as to the ultimate issue. The disproportion of power and resources between the Boer republics, with a smaller total population than would fill a second-rate English city, with no allies, or external sources of supply, and without a single port or ship, and the united power of the whole British Empire, with its own vast resources and a perfect command of the world's supplies, was so grotesque, that only the most astonishing delusion on the part of the Boers, or the most determined effort to sell their independence at a price which 'would stagger humanity, could have caused them to sustain the struggle. That the latter was the determining influence is now quite evident, and it is one which the British people, of all others, can best appreciate. There was no possibility of intervention by any foreign power, whether from motives of chivalry or malice. The European nations were so heavily burdened by the cost of maintaining military organizations of such vast proportions in comparison with their means, that they could not employ them beyond their own dominions without such ruinous expenditure as could only be thought of in a struggle for their own preservation. The United States was the only country financially capable of risking a war with Britain. But the financial interests of the United States and Britain are so interdependent that intervention, unless forced upon the government by the ignorant masses, was out of the question. Besides, the United States was itself engaged in thrusting a higher civilization upon most ungrateful barbarians in the Philippines.

That the normal conscience of the great middle class in Britain did not delight in the war, was shown in their general aversion to anything savoring of unnecessary cruelty in its conduct, hence a steady check was put upon the spasmodic efforts of the Colonial Sec-

retary and some South African extremists in that direction. War is, under the best of circumstances, in General Sheridan's terms, a concrete expression of Hell, or, in the milder language of the British Liberal leader, a method of barbarism. Like lynching, it is a dire extremity. On the whole the British authorities sought to minimize as much as possible its inherent barbarism. That it should still have been so barbarous, and, by reflex influence, so stimulating to the latent coarseness in the national life, adds immensely to the gravity of the responsibility which rests upon those who are entrusted with the diplomatic machinery which has been devised to avoid war. One's confidence in the capacity of patient and wise diplomacy is greatly strengthened when one sees how the most inevitable wars can be avoided by such a capable minister as Lord Lansdowne, even when to his other difficulties is added the necessity of neutralizing the effects of the reckless insults hurled by the Colonial Secretary at the Powers with which he has to deal.

It is pleasing to observe the general satisfaction with the very honorable terms which were granted to the Boers on relinquishing their independence. The demand for unconditional surrender, and the foolish threats of drastic treatment after the surrender, were wisely overruled by the better elements in the Cabinet, and the admirable effect upon the new British subjects is already manifest. In the terms of settlement Britain has saved her national dignity, and the Boers have obtained peace with honor. The Boer has never considered his status as an independent burger, superior to that of a British citizen, yet Englishmen should be able to understand his aversion to being made a British citizen by arrogant coercion. Now that he has so amply vindicated his independence of spirit, there is no reason why he should not become a thoroughly good citizen of a united South African state, which, while constitutionally part of the British Empire, will before long enjoy that independent self-government which we so thoroughly appreciate in Canada. To approve of the settlement, however, is not to justify the war. We may approve of a man joining a church, but we may object to his being given the option of joining it or being lynched. One may have been quite sure that the unity of South Africa was necessary to the future development and higher civilization of that portion of the world, without justifying the stupid and tactless method by which it has been brought about. The Boer enjoyed liberty in his two republics before the war; the Boer will enjoy liberty as a British citizen; but as a subject of an independent republic controlled by British mining interests, having no sympathy with him or his ideals, the Boer would have lost his economic, social, and political liberties, with no power of redress or appeal. By pass-

ing directly from the condition of a free burger to that of a British citizen he has at least escaped that intermediate abode of lost souls. Much the same may be said of the natives whose only salvation lay in escaping the tender mercies of a mining republic. Now that they are within the British Empire, we shall watch with interest the coming struggle between the mining interests and the British conscience. But the mining interests are very near, and the British conscience is very far, and slavery may not smell as rank under another name, such as "labor contract," or, as that is rapidly tainting in the African climate, some fresher gloss may be chosen.

One cannot but commend in the warmest terms the spirit in which the General Assembly of the Presbyterian Church has dealt with the proposed changes in the constitution of Queen's University. Not feeling justified, in the face of its other duties, in undertaking further responsibilities on behalf of the University, and not wishing to stand in the way of its future expansion, the Assembly has wisely and magnanimously undertaken to free the University from the nominal control of the Church. Through a committee of the Assembly it will co-operate with the Trustees in obtaining for the University a new constitution. The transition in Queen's itself from a denominational college to a national University, has been going on so gradually and so naturally that when it obtains, by act of the Legislature, its new charter, there will be no appreciable effect upon its academic life, even as regards the theological faculty. Indeed, there does not appear to be any reason why such subjects as the original languages and literature of the Bible, church history, comparative religion, and the central features of theology, with doubtless several others, should not be treated in the same scientific or philosophical manner as any study in the arts course. And, if so, they should be as adequate a basis of training for the ministry of any church as the subjects of the arts curriculum which the same persons take for their arts degree. The recent rapid expansion of Queen's under the administration of Principal Grant, proved the necessity for a reconstruction of its constitution. The very limited professional and denominational restrictions upon the choice of a principal, under the existing charter, were fortunately satisfied in the case of Principal Grant, but the sphere of the principal's office was so greatly enlarged during his regime as to make them altogether anomalous for the future. For financial, executive, and academic reasons, the head of the University, with its enlarged arts and medical faculties, must

also be virtual head of the School of Mines, and for similar reasons the governing body of the University must be permitted to take on a wider character, more representative of its now large and varied constituency. The action of the General Assembly, therefore, indicates that all sides of the complex interests which now centre round Queen's have been faced in the most liberal and enlightened spirit. Such being the case the future development of the University will naturally bring increasing honor to the Church under whose maternal care it has grown from helpless infancy to self-reliant and self-responsible manhood.

S.

PRIZE ESSAY ON THE INFLUENCE OF JOURNALISM.

The Chancellor of Queen's University, Sir Sandford Fleming, has offered the sum of two hundred and fifty dollars (\$250), to be awarded for the best essay or essays on the following subject :

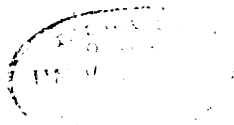
"How can Canadian Universities best benefit the cause of Journalism as a means of moulding and elevating public opinion in the Dominion?"

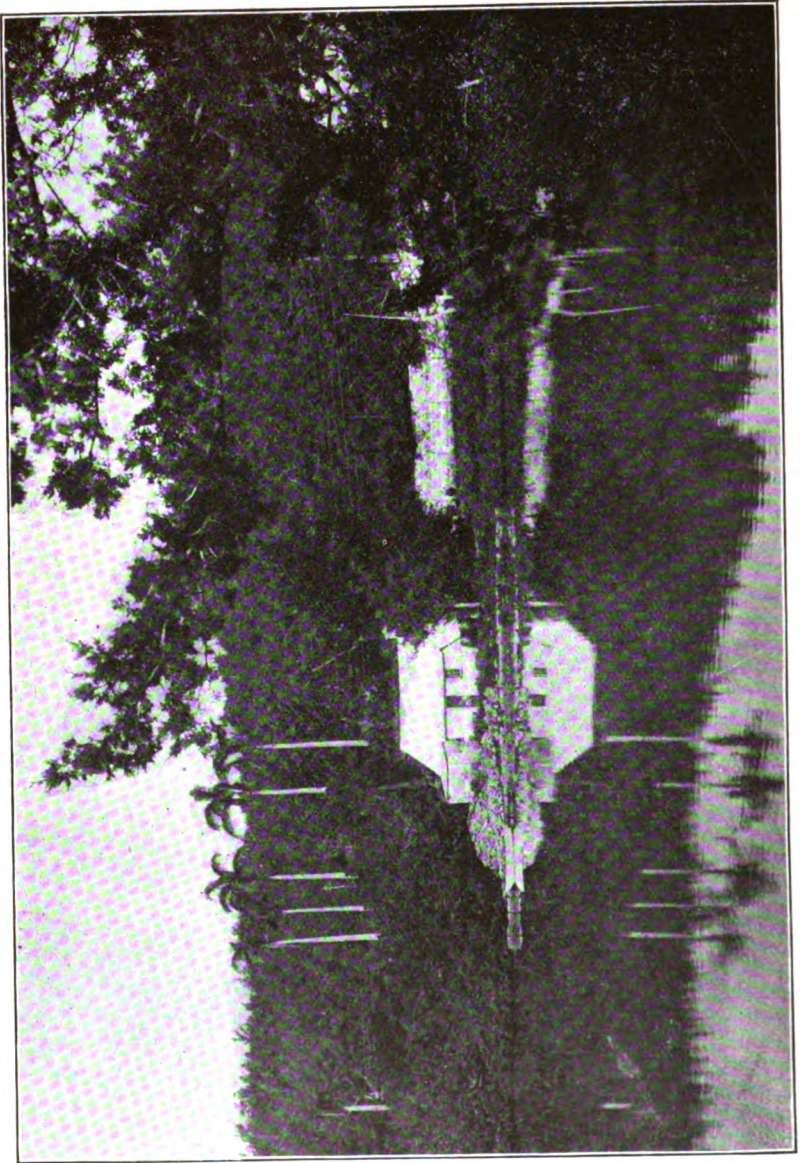
THE CONDITIONS ARE AS FOLLOWS :

1. The competition is open to all resident Canadians, or Canadians temporarily absent who remain British subjects.
2. It is not desired that the essays should exceed eight or at most ten thousand words in length.
3. Each Essay must be clearly type-written.
4. Essays are to be sent in before Dec. 1st, 1902, to "The Registrar of Queen's University, Kingston, Ont.," signed with a motto, along with a sealed envelope containing the name and address of the author.
5. The prize of \$250 may be given, at the discretion of the Judges, to one, or may be divided between two or three of the competitors.
6. The essay or essays adjudged worthy of a prize are to become the property of the Alumni of Queen's University, and to be read in public at the Alumni Conference next February.
7. The Judges are Mr. G. S. Willison, representing the Canadian Press Association, the donor of the prize, and the Principals or acting Principals of McGill and Queen's Universities and of University college, Toronto.

By order,

GEO. Y. CHOWN,
Registrar, Queen's University.





TOM MOORE'S HOUSE.

Queen's Quarterly.

VOL. X.

OCTOBER, 1902.

No. 2

BERMUDA.

VERY unique is Bermuda; unique in its position in the wide Atlantic; unique in its formation and conformation; unique in the richness of its landscapes and its glorious multi-colored shades of ocean water; unique in its semi-tropical climate and vegetation; unique in the purity of its atmosphere constantly stirred by the fresh sea breezes blowing across and around; unique in its quaint mixture of the old and the new; unique in its strategic importance and its military strength—in the harmony of life between the children of Japhet and those of Ham—in the varied and attractive society, belles of New York, red-coated soldiers and navy officers; it is unique in its divers complexioned sons and daughters; it is so near to the hurly-burly of nerve-straining Gotham, and yet it is a very haven of rest for body and mind; unique is the gulf stream that has to be crossed; unique, too, all devoutly hope, the sensations on that wonderful oceanic river may be.

Here warbled the dainty Ariel; one sees many a nook where he swayed to and fro on his delicate swing; the lipping waves still echo his sweet songs; and on every side is heard "the strain of the strutting chanticleer cry, Cock-a-doodle-doo," for these are "the still-vexed Bermoothes." In the fields "are many a cow-slip bell, where Ariel slept," and the velvet buds, where at evening he "lov'd to lie, and win with music every rose's sigh"; on the shores are "many a shell, in which that gentle spirit drew from honey flowers the morning dew."

Here for a time dwelt Tom Moore, and many are the pilgrims who visit the lovely spot where he abode and where he wrote the ten passionate odes to Nea and three metrical letters, one just after his landing, and commencing

Oh, what a sea of storm we've pass'd,
High mountain waves and foamy showers;
another, writ in the shade of the calabash-tree, and beginning
The daylight is gone—but before we depart
One cup shall go round to the friend of my heart;

and a third to the Marchioness Dowager of Donegal, a "most pleasing and exact description" of these islets of Ariel. For fifteen years Moore profitably farmed out his position as Registrar of the Admiralty Court and then he was greatly disgusted and much troubled to find himself involved to the extent of over £7,000 through the speculations of his *locum tenens*. Here, too, "Waller has stray'd." Here is

That little bay, where turning in
From ocean's rude and angry din,
As lovers steal to bliss,
The billows kiss the shore, and then—

Here,

Along the margin, many a shining dome,
White as the palace of a Lapland gnome,
Brighten the wave.

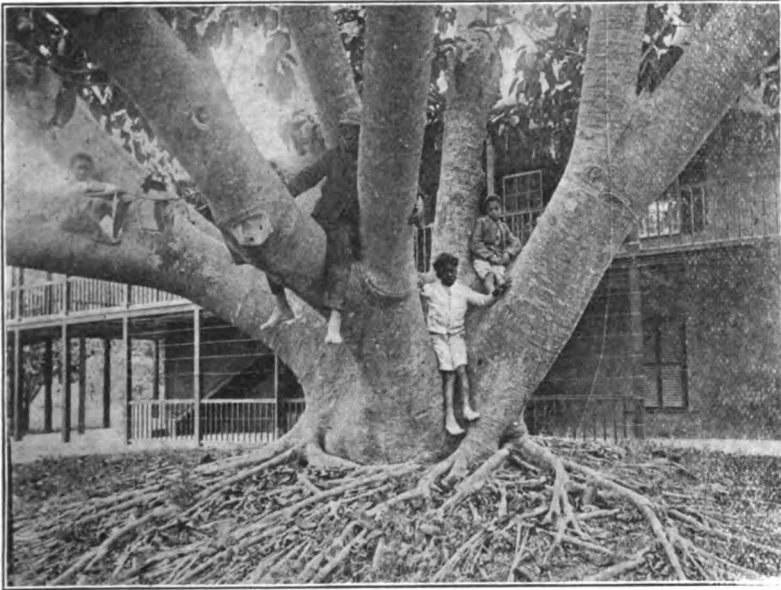
Beauteous is this land of the lily and the rose "as a drop of the morning dew that falleth down upon the earth"; and beauteous are the things that grow thereon, the flowers of the field, the birds of the air, the fish of the sea; here were never found "unknown wild beasts, full of rage, breathing out either a fiery vapor or filthy scent of scattered smoke, or shooting horrible sparkles from their eyes" (as Solomon wot of). John Smith even in his day could tell of no noisome creatures "but only rats and cats" (and those came from England); even the spiders, although of very large size, were not in any way dangerous, but "of a most pleasing aspect, all over drest, as it were, with Silver, Gold and Pearle"; but he admits "the Musketas and flies are too busy." As it was then so now in "this little, yet dainty spot of earth,"

No adders, serpents, toads or snakes are seen,
To prejudice man's health.

Reefs surround these islands at distances varying from a few yards to ten miles, and they are by no means difficult to reach. Wonderful things can be seen out on them (with sea glasses) in the deep clear waters, lilac colored wavy fans, sea anemonies, brain and branches of coral of every shape and size; weeds black, green, red, brown, pink, yellow; fish with azure backs and pearly white below, banded with yellow on each side; fish with similar bands on white bodies, rosy pink fins, and oval black patches near the tail; fish with yellow fins and scarlet spots; fish yecept angel, and fish called devil. The Aquarium in New York is very rich in Bermuda fish, and on the Main Island there is an enchanting pond politely named Neptune's Grotto, but generally called the Devil's Hole where hundreds upon

hundreds of large hungry gropers swim about, their ugliness relieved by the blue, green and gold of the lovely angel fish.

Originally the cedar seems to have covered the land—but all sort of flowers and shrubs and trees have been introduced and nearly all have thriven and make these islets veritable gardens of the gods. John Smith, in 1623, says that there was an abundance “of white, red and yellow potatoes, tobacco, sugarcane, indicos, parsnips, exceeding large radishes, the American bread, the cassada root, the Indian pumpkin, the water millon, musk millon, the most delicate pine-apples, plantains and papaws, briefly whatever else may be expected



RUBBER TREE.

for the satisfaction either of curiosity, necessity or delights.” The eyes of visitors from the domains of our Lady of the Snows is greeted even in winter time with the sight of bamboos and palmettos, cocoa-nut and date palms, orange and lemon trees, grugru palms, wampee and litchi trees, hedges of hibiscus and oleanders, huge rubber trees (the one shown was brought from Essequibo 35 years ago), and all our summer blooms. Although three or four crops of vegetables can easily be produced each year, yet agriculture is now in a very backward state; notwithstanding all the fruits which might be grown, not enough is raised for home consumption. Potatoes, onions and lily bulbs are the chief product. In 1901 there was exported

over 27,000 barrels of potatoes, and 287,000 boxes of onions; the trade in lily blossoms is not what it was—the bulbs are now more dealt in.

We pray thee, gentle reader, take a little mixture of history with your geography, for as an early writer says, "Geography without History, seemeth a carkasse without motion; and History without Geography wandreth as a Vagrant without a certain habitation."

Juan Bermudez, a Spaniard, about 1513, discovered "where the remote Bermudas ride, in the ocean's bosom unespied"; Philip II granted them to one Ferdinand Camelo, a Portuguese, who took formal possession in 1543 by landing and making his mark on a high cliff where the faithful can behold it until this day. Stormy seas, dangerous reefs, sundry disasters and divers shipwrecks led the Spaniards to call these little fairy isles "Los Diabolos," the Devil's Islands, and they avoided them. The shipwreck of a bold buccaneer—Henry May—in 1591, amid the coral reefs, and his enforced residence upon these islands until he and his men had built a small pin-nace, first introduced the Bermudas to the English mariners. Another shipwreck in 1609, led England, that "snapper up of unconsidered trifles" of land, to appropriate Bermuda and to re-christen it. Sir Thomas Gates, Sir George Somers and Captain Newport *en route* with a flotilla of nine ships for Virginia were cast away on the Isle of Devils, which as Captain John Smith, of Poccahontas renown, says had "beene to the Spaniards more fearfull than an Vtopian Purgatory, and to all seamen no lesse terrible than an enchanted den of furies and devils; the most dangerous, unfortunate and forlorn place in the world;" but these gallant men found it "the richest, healthiest and pleasanteſt" land they had ever seen. Many months passed while crafts were being built to carry them to Jamestown, and meanwhile two children were born (probably the first that were ever born there), and were called Bermudas and Bermuda, being boy and girl. Jamestown was famine struck when the emigrants arrived there and so old Sir George returned to these islands—which the English called after him—to obtain a cargo of wild pigs for the starving Virginians; and how death came upon him there, is it not written upon the marble tablet on the ivy-covered wall, near to where his heart lies buried, in the quaint old town of St. George? Forthwith the Somers Islands were boomed in England; James I granted a charter to one hundred and twenty gentlemen who formed a company called "the Governor and Company of the City of London," who ruled the land until 1684. Governor Moore brought out sixty emigrants in 1612 and laid the foundations of St. George's, for two centuries the capital of Bermuda; he built forts, trained the colonials to arms, scared

away the Spanish ships that threatened them. Were this a history we would tell how the colony grew, how it was oppressed, how one governor chastised the people with whips, and another with scorpions, and others were near akin to pirates and brigands, and how men and women risked their lives trying to escape from tyranny, how a good percentage of the people were hung, how slaves—Negro, Indian and Irish—were introduced, and how, notwithstanding, the colony thrived.

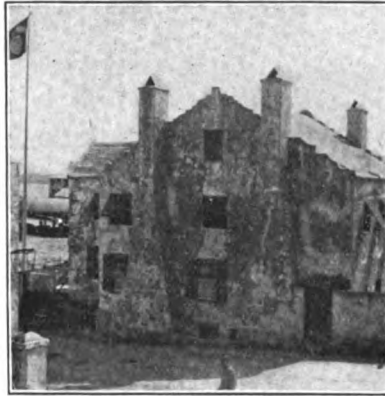
The first survey shewed that instead of being one and indivisible, the Bermudas consisted of some five large islands, extending in some twenty-five miles, and some five score or more small ones. (When a bridge now being built is finished the large islands will all be connected.)

In 1775 George Washington issued a very polite address to the people of Bermuda, soliciting their aid and promising them marks of affection and friendship; he had some friends there and in some way got a large quantity of gunpowder stored on the islands, and this he so skilfully used that with it the British were driven out of Boston. However, proclamations did not win Bermuda from the old flag any more than they did Canada; towards the end of the year of independence a plan was on foot to capture these seagirt lands and make them "a nest of hornets" to annoy the British. But peace came first. The end of the eighteenth century was a prosperous period for the islanders; the population rose to 15,000, but in the beginning of the next century it sank again to 8,500, now it is 17,500, of whom two-thirds are colored.

The flush times came with the war of secession, and many an American citizen then heard of Bermuda for the first time, it was the great resort for blockade runners; immense stores were brought thither from England and transferred to swift sailing steamers which, despite all the care of the Northern men of war, soon found their way into Southern ports, bringing back cotton for England in return. Captains and pilots often received \$5,000 in gold for a round trip that perchance had not lasted more than a week. St. George's was a busy wide-awake town then; when peace came it fell asleep and still sleeps. Its "Globe Hotel" is the oldest hostelry on the islands.

Since 1815 Hamilton has been the seat of Government, and in that bright little capital of 2,000 people are the Parliament buildings, Court House, Custom House, churches of divers denominations and hotels galore, a well stocked public library, with a most courteous librarian. Near the town is Mount Langton, the Governor's residence, with its splendid park some seventy acres in extent; hill and dale, adorned with many beautiful tropical trees and lovely gar-

gens. The "Princess Hotel," an ideal hostelry, stands on deep water a few minutes' walk from the city. Going on for a mile or two beyond the Princess, passing Fairy Land with its lovely lily fields sometimes adorned with 100,000 blossoms, and Mangrove creek, one comes to the Admiral's house on Clarence Hill, with its extensive and well



THE GLOBE HOTEL.

kept grounds, its splendid marine views and some exquisite bits of gardening; here is a cave against which the sea is forever dashing, and in which the restless tide ever ebbs and flows, the hand of man has enlarged it so that one admiral gave a gay ball in it; an ideal spot it is when the sun is in the zenith, and one sits in its still coolness, gazing seaward through its deep windows cut in the living rock. Here, too, is a long tunnel built under the highway connecting the two parts of the grounds; and on a hill looking out to the boundless ocean is the figure-head of Nelson's old *Irresistible*; the hull rests on the shore some mile or so away.

On the other side of Hamilton is Prospect Camp, the chief military station on the Islands. The force is quite large, for Great Britain says distinctly in Bermuda, "What we have we hold." Ireland Island is the most important naval position: here are the men of war, the gun boats, the torpedo boats, the arsenal and the dockyard; hither in 1868 was brought from England the largest floating dock then in existence, it is 381 feet long; and hither has just been towed a new one 545 feet in length and capable of lifting 17,000 tons.

The houses are nearly all of white coral stone, which is cut out of the quarries in blocks of the required size by saws. Thinner slabs of the same material are used for the roofs. Each dwelling has, by law, to be provided with a tank into which the rain water is conduct-

ed from the roof; to ensure the purity of the water so saved, which is practically all the fresh water the islanders have, (and very good and pleasant to the taste it is), the roofs are annually whitewashed. A few Artesian wells in the neighborhood of Hamilton increase the water supply; large areas on the side of the hills, in many parts, are covered solidly with stone to catch the precious drops from heaven; the churches and public building also do their duty in this respect as well. And yet a water famine is often imminent, and it is said that drinking water was actually brought from New York to supply the Boer camps before the distillation machines were put in operation. The water will keep for years in these tanks. Artificial ice is made out of it in abundance.

Outside the towns the roads wind in and out and around about in fascinating curves; to an outsider it appears as if a house is built wheresoever the owner listeth, and then by the longest way round a road to it is constructed. But what matters the extra steps; people are not in a hurry; the stone walls bordering all the fields are beautiful with ivy and cacti and life plants and ferns; the cedars in the fields are green; palms, bamboos and flowers are everywhere, and the roads are *sans reproche*. If the grade is too steep it appears of little trouble to cut the rock foundation down a few feet or so, and this is done until in many places the carriage runs between perpendicular



KHYBER PASS.



NATURAL ARCHES ON SEA SHORE.

banks a score or two feet high, white rock below, living green verdure above. The so called Khyber Pass is a shady cut of this kind some five hundred feet long and from twenty to fifty high. The poor convicts who dwelt in Bermuda, when it was a penal settlement, have to be thanked for much of the goodness of the roads. In this Para-

dise the horseman, the cyclist and the pedestrian, must remember that the rules of the road are English, you know, and

If you go to the left you are sure to go right,
If you go to the right you are wrong.

The churches in "these leafy isles upon the ocean thrown, like studs of emerald o'er a silver zone," are numerous and most interesting. Of the people, 11,600 are Anglicans, 3,300 Methodists, 944 Roman Catholics, and some 600 Presbyterians. The grandest church by far is the Anglican cathedral, on which they have been working the last eighteen years (the old one was burnt in January, 1884) building for eternity, as did the holy old Monks of the Middle ages. It is finely placed on a hill in the centre of Hamilton. The nave is complete and in use, the tower and the chancel are well under way. It is chiefly of the best native limestone; the interior pillars—of which there are two double rows—are of Peterhead granite, with Caen stone bases and Nova Scotian caps. The pulpit and lectern, of Caen stone and Irish marble, are copied after those in St. Giles' in Edinburgh. The style is Gothic.

The oldest, and mother parish, church is St. Peter's in St., George's, it is the quaintest of quaint churches, both inside and out and roundabout: the present walls were built in 1713, and the thatched roof replaced with stone about 1765. It boasts of a massive silver Communion service presented by William III, of great, glorious, pious and immortal memory, in 1684. Holy Trinity, near Harrington Sound, was built about 1623. Many changes and enlargements have since been made, but a part of the old walls still do duty and re-echo the weekly prayer and praise of the people of the tribes of Hamilton and Smith. Nine of these fine parish churches stand surrounded by the stone sepulchres of their quiet dead; all of them save two saw the dawn of the XIX century, and four knew the XVIII when it was young.

The old Presbyterian church in Warwick contains a mural tablet in memory of the services held there in 1748 by George Whitefield, and the pulpit that eloquent Anglican occupied is still in the gallery of the church.

The church-going habits of the islanders are very striking and strong and seem to affect even the boarders at the hotels; Sunday is a peaceful Sabbath day and the public religious services are very well attended, the ferries and the stages run not, labor ceases; but as John Knox used to play bowls in Geneva, although not in stern, strict Edinburgh, so in Bermuda on Sunday afternoons a few quiet games of golf and tennis may be seen. Sabbath observance is no new fad

in these Islands, as far back as 1619 a proclamation was issued as follows :

"Because vain and prodigal and idle persons do continually use to play at dice and cards and such unlawful games upon the Sabbath-day at times of divine service, and divers greedy and covetous men set their servants to work cleaning ground, planting corn, &c." For the first offence the penalty was two days' imprisonment in irons, and a fine of ten pounds of tobacco ; for the second offence, fourteen days imprisonment and twenty pounds of tobacco ; "for a further offence he shall receive such punishment as is thought fit and be dealt with as a mutineer and rebellious person deserves."

Church officers had no sinecures. We find that in 1623 the Legislature enacted, "That churchwardens and sidesmen shall suffer noe playes, churchales, temporell courts, maskers, quarrellinge or brawlinge, or any other p. phane usage to be kept in the church.

"The ch. wardens and sidesmen of everie p. rishe shall diligently see that all p. ishioners shall resort to their p. ish church upon all Sundays and holy days and there continue the whole tyme of diuyn service and catechisinge and shall suffer none to walke or stand idley, or talke or sleepe, or use any unreverent gesture in or about the church during that tyme.

"And to prevent and detect such misdemeanors as are often practised by those who absent themselves from church, the ch. wardens, constable and sidesmen shall after the reading of the first lesson go forth of the ch. and search the most suspected places & shall compell all such as they shall find (having noe greate or urgent cause of absence) to come to the ch. and in case any shall deny their entrance, or shall make any resistance, it shall be lawfull for them to breake open the door upon them and to p. cede against them as common disturbers of the peace.

"The ch. wardens and sidesmen were to place the p. rishoners in convenient seats according to the degree of the p. ishoner.

"The warden and sidesmen shall dailie observe the carriage and lives of the people & shall informe the minister who is to admonish the offenders or present them at the assizes ; they shall present all papist recusants and heretics and those who refuse the sacraments : all sorcerers, enchanters, charmers, witches, figure-casters or fortune-tellers, conjurers, or whosoever hath or seemeth to have any familiar consultation with the devil : all common swearers, blasphemers, sabbath breakers, all raylers, quarrellers & makebates or talebearers, all adulturers, usual gamesters for money, tobacco, &c., all extortioners, &c., all drunkards, all keepers of tippling houses, all cruel persons, chiefly such as will abuse their wives by striking them, whom they

should love and cherish as their own bodies as the apostle teacheth ; to collect all levies for the poor, &c."

This law was repealed in 1667. On July 26, 1652, Gov. Forster issued a proclamation as follows : "If it shall fall out that any man or woman journeying shall be straightened of tyme so that they cannot return to their abode on the Satterday then yt is required that they shalle staye & spende their Sabbath in that place where they are, except only they can reach to their own parish church by the beginning of the morning exercises. Nevertheless, yt is not my intent hereby that any shall be restrained from fetching a midwife or chirurgeon, or to do any charitable act on that day."

One seldom sees an astray—horses and cows are tethered in the pastures, and one occasionally sees an old hen or a turkey tied by the leg to prevent its wandering. By a law of 1620 turkeys and poultry were to be housed until the corn was half a leg high, otherwise one finding them at large might kill them and take them as their own. Some interesting glimpses of life here in the seventeenth century comes to us through these turkeys ; we can read in the records of the Islands that in 1626 Dorothy Whittears for stealing a cock turkey was sentenced to 30 lashes upon the bare back privately given. In the same year Margaret Heyling, for stealing a hen turkey, was indicted—the jury acquitted her and were thereupon sent to prison by the governor and fined 20 lbs. of tobacco each man ; another jury impannelled found her guilty and she was sentenced to 12 stripes upon the bare back in private ; at the request of her friends the stripes were remitted and she was sentenced to stand for two Sabbaths in church with a paper on her breast written in great letters "for stealing of a turkey," and to sit behind the church door for the space of six months ensuing.

In 1653 Henry Ward was thus indicted, The jury for the keepers of the liberties of the Commonwealth of England do present that Henry Ward not having the fear of God before his eyes did consent with the devill to bewitch the turkeyes of Thomas Atkin of the Islands aforesaid, which cast them into strong fitts so that they at last died by that diabolical practise, contrary to the peace of the Commonwealth of England and the dignity thereof. The bill was ignored and the prisoner cleared by proclamation.

Notice the curious mingling of cruelty and modesty, the power of the governors and the subserviency of the juries, the church going and the superstition.

About 1651 the witches and wizards appeared in numbers sufficient to attract the attention of the magistrates and to call for a condign punishment. Here is a copy of the record of the trial of Jeane

Gardiner, who was indicted as follows: "The jury for our Sovereigne Lord the Kinge doe present Jeane Gardiner the wife of Ralph Gardiner of the Hambleton tribe, for that the said Jeane on or about the eleventh day of April 1651 felonously, deliberately and maliciously did saye that she would crampe Tomasin, a mulatto woman in the same tribe, and used many other threatening words tending to the hurt and injury of the said mulatto woman, and within a while after by practise and conbinasion with the devill feloniously did practise on the said mulatto woman the diabolical craft of witchcraft inso-much that the said mulatto was very much tormented and struck blind and dumb for the space of twoe hours or thereabouts, and at divers times at other places did practise the said devilish craft of witchcraft on several persons to the hurt and damage of their bodyes and goods, contrary to the peace of our said Sovereigne Lord, &c."

"To which indictment she pleaded "Not Guilty," but being that the grand jury found a trewe bill and fur her further triall did put herself uppon God and the countray, wch. being a jury of twelve sworn men did find her guilty, whereuppon the sentence of death was pronouced uppon her, and accordingly she was executed on Monday, the 26th day of May, at St. George's, before many spectators.

"The proceedings against this woman were longe and tedious by reason of many accusations. The governor and council were very careful to find out the trewth. They caused a jury of women to search her and one Goody Bowen who was suspected, and the jury returned the following, "Having made diligent searche according to our oathes we can't find any outwards or inwards mark so far as we can p. ceave whereby we can in conscience find them or either of them guilty of witchcraft, onley in the mouth of Goody Gardiner there is a blewe spott which being prickt did not bleed, and the place was insensible, but being prickt close by it it bled the wch. we leave to the judgment of Phisitians." Mr. Hooper and the chirurgeons being appointed to view that spott the day that she was to come to her triall and it was fallen away and flatt, and being prickt it bled, and it was known to be there eighteen years, and for further triall she was tied and thrown twice into the sea, she did swim like a corke and could not sink. These signs and other strong evidence in Court condemne her, yet nevertheless she would confess nothing at her death. She was demanded in court if she could give a reason why she did not sinke. she answered she did open her mouth and breathe but could not sinke."

The names of the women who formed the jury are given in the record. Captain Josias Forster was governor at that time.

Jane Hopkins was the last person executed in Bermuda for this

crime and that was in January 1654-5; the last trial took place in March, 1683-4. Strange to say the clergy do not appear to have intermeddled very much in these matters.

An entry in the old records of 1657 brings to our minds the doings of Cronwell in the Emerald Isle. The grand jury ordered that those that had Irish servants should take care that they straggle not night or day as was too common with them. Any master or mistress that was remiss on this point was to be fined. It was made unlawful to buy any more of the Irish nation on any pretence; those already purchased were to be brought to the meeting places on Sabbath days by their masters and dames, and made to stay either abroad or in the church during the time of exercise.

But, gentle reader, others want a page or two of this number of the *QUARTERLY*, so we must say "Farewell to Bermuda." Could you go to Tom Moore's house amid its sylvan beauties, with its tangled wildernesses of trees and shrubs, its mimic lakes, its grottoes, its stalactites and stalagmites,

Could you but view the scenery fair,
That now beneath his window lies,
You'd think that Nature lavish'd there
Her purest wave, her softest skies,
To make a heaven for love to sigh in,
For bards to live, and saints to die in.

R. VASHON ROGERS.

SOME RECENT CONTRIBUTIONS TO THE LITERATURE OF FORESTRY.

THE history of civilization is very largely a record of the struggle between the constructive and the destructive tendencies in man's nature. The savage readily adopts and improves upon the methods of extermination practiced by the lower animals, but it is only by slow and painful steps that he learns to preserve and increase the bounty of mother earth and the fruits of his own labor. The sword and the spear are supported by instincts older and deeper than any which aid the ploughshare and the pruning-hook, and many generations of culture and partial restraint have not sufficed to atone for the bias thus bequeathed to us from the ages of darkness.

It would be an interesting problem to consider the history of these opposing tendencies as reflected in literature and art. The most popular form of composition in the old stone age was doubtless concerned with deeds of violence such as survive in the "best selling novels" of the twentieth century, and the cave-dwellers have left behind them rude pictorial representations of the endless struggle which was the price of existence in those strenuous days. But in spite of eddies and back currents the stream of human progress flows onward and mankind is learning to find in the productive pursuits of peace a higher satisfaction than could ever be attained by devotion to ideals of rivalry and distinction. This development must have its reflex in the solid productions of the literary world though the latter may be sometimes overshadowed by less worthy competitors.

The higher arts presuppose a certain permanence in the interests of the people. Agriculture in even its simplest forms becomes possible only when man's interest in his surroundings is measured by years rather than by months or days, and a "branch of agriculture" requiring decades or even centuries to mature its harvests is to be looked for only where a conscious attempt is being made to find a permanent equilibrium in the natural conditions and productions of a country. Such is the art of forestry as practised for many generations in the populous countries of the Old World and now fast growing in importance on this continent.

The primitive conditions of a new country endowed with seemingly unlimited wealth of animal and vegetable life provide a powerful stimulus to the wasteful tendencies while the earlier stages are of necessity devoted largely to the destructive processes which make possible the productive arts. Thus the settlement of North America by European races involved profound changes in the face of nature. Agriculture was rendered impossible by the vast forests of the east-

ern districts, and the pioneers, to whom agriculture was the first necessity, applied themselves diligently to the task of clearing half a continent. Their success in this undertaking was swift and complete and it is only in recent years that thoughtful men have begun to appreciate the permanent loss caused by this indiscriminate destruction of forests. Now that the awakening has come, however, there are on all sides signs of a rapidly growing interest in the preservation of the remaining woodlands and the reforesting of waste lands by methods based on sound business principles.

This later attitude has given rise to a distinctive literature bearing on the problems of New World forestry which demands the attention of every one who would keep abreast of the times in a matter of great future moment to this country. It is the purpose of the present article to outline briefly some recent publications in this department which may serve as an indication of the lines along which development is taking place both in theory and practice.

For information concerning the methods and progress of rational forest management in Canada we are indebted mainly to the publications of the Bureau of Forestry for Ontario and of the semi-official Canadian Forestry Association of the Dominion. As early as 1883 our provincial authorities recognized the need for providing a centre for information and for educational work and a bureau was established which has abundantly justified itself by the dissemination of useful and timely literature in its reports prepared and published from time to time. In this way much valuable information concerning local conditions and tendencies has been made available along with extracts and contributed articles of a more general nature. Thus the report of 1899 will be found especially interesting for its careful summary of legislation regarding the timber industries from the time of the French regime, while the current issue deals suggestively with such problems as farm forestry in the settled districts and the recent setting apart of vast forest reserves from the timbered areas of New Ontario.

The Canadian Forestry Association was organized at Ottawa in 1900 with the active support of the Department of the Interior and has already done much to create an interest in the wider problems affecting the Dominion. The reports publish excellent practical addresses delivered at the annual meetings by representative members from the various provinces and visitors from the neighboring republic. The work of the organization is carried on throughout the year by a permanent secretary, and a Forestry Department of considerable interest is maintained in the official organ of the association—*Rod and Gun*, a Montreal monthly devoted to the interests of outdoor

sports in Canada. An important feature of the work being done under Dominion auspices is the attempt to establish shelter belts of timber in the prairie regions of Manitoba and the North-West Territories. The publications of the Department of the Interior describe the conditions and progress of this interesting movement.

Work of a similar nature but more ambitious in scope is being done by the Division of Forestry of the United States Department of Agriculture and by the bureaus established and maintained by very many States of the Union. For some decades the Federal Department has had the assistance of the highest authorities on the continent either as its officers or collaborators, and has enjoyed the liberal support of Congress in carrying out its investigations. The result is seen in its admirable series of bulletins which are as remarkable for their adaptation to practical needs as for their scientific thoroughness and accuracy. These publications dealing with all aspects of the subject are distributed amongst those interested, either *gratis* or at merely nominal prices and with a splendid disregard for international boundaries. It would be impossible in this place to give even a list of the valuable contributions issued under the very modest titles of Bulletins or Circulars, which are in reality exhaustive monographs on current problems. Taken collectively these supply a very fine library of information on the topics of New World forestry and are to be commended to every student of the subject. The reports of the various State Foresters and Commissioners are of interest for comparison with Canadian conditions, that of the New York State Game and Forest Commission for 1899 being of special value.

Many of our sources of information referred to above are necessarily of a somewhat technical nature and appeal particularly to students who are more or less familiar with the wide circle of sciences upon which modern silviculture is based. The opposite extreme is shown in the numerous volumes recently issued by American publishers dealing in a popular way with the characteristics of our indigenous trees. These serve to indicate a wholesome interest and no doubt convey a considerable amount of information in the sugar-coated form which alone is palatable to many modern minds. It is to be regretted, however, that the truth sometimes suffers in the translation into popular form as, for example, when we are gravely informed, in one of the most pretentious of such works, that the Indian weaves his baskets from the "pliant young shoots" of the Black Ash!

But, fortunately the general reader is not limited to these contrasted extremes. His demand is rather for a volume of reasonable dimensions which can convey an intelligent grasp of the subject without either concealing its principles beneath technicalities or ig-

noring these principles altogether. Twenty years ago Dr. F. B. Hough, then chief of the Forestry Division at Washington, published his "Elements of Forestry" which was probably the earliest effort to meet this need and which is still a valuable work of reference. It contains, however, more matter than is needed for the purpose under discussion and deals of necessity, very largely with methods practised in Europe. Subsequent works by American authors, notably Fuller and Houston, followed similar lines without notable advance and often with a tendency to substitute botanical lists and descriptions for the discussion of the subject proper.

For the requirements of the present day an excellent work has been prepared by Prof. Gifford, of Cornell University. His "Practical Forestry," published by Appletons during the current year, presents in popular form the essentials of the subject "shorn of pedantry, simplified and divested of technical details." Thus treated, as the author very justly observes, forestry falls readily into place by the side of horticulture and agriculture and its science comes easily within the reach of anyone of ordinary intelligence. In this convenient volume of less than three hundred pages we have a very satisfactory discussion of the whole subject logically presented with due attention to its more recent developments.

The introductory division, after giving a concise account of the meaning of forestry and its relation to the kindred arts, deals instructively with the forest as a whole and with its influences in modifying natural conditions. The discussions on the relations of the forest to soils, to streame and floods, to winds, to sanitary conditions and to the beauty of the landscape are treated with a freshness that commands attention to a phase of the question of much interest to our older districts. The second division emphasizes more particularly the artificial means of propagation and care with special reference to American conditions as exemplified in the New York State reservations in the Adirondacks. Prof. Gifford has had charge of the operations in this reserve which is associated with the College of Forestry at Cornell University, and his readers have thus the advantage of his practical experience as well as his thorough mastery of the underlying theory.

The remarks on the causes of forest fires and methods of protection might well be pondered by every Canadian lumberman. A few years ago enormous quantities of slabs, edgings and similar mill refuse, which have now a very considerable value, were burned in the yards for want of better means of disposal. The waste of the forest operations, consisting of highly inflammable material, is still left scattered over the denuded areas to feed the fires which inevitably

follow, destroying not only the remaining timber but frequently the soil itself and the possibilities of reproduction.

The various industries dependent upon forest production provide material for two suggestive chapters giving glimpses of lumbering and other operations under conditions very different from our own. Such, for instance, are the methods employed in exploiting the gigantic Sequoias or "Big Trees" of California. These giant survivors of the pre-glacial silva, often exceeding 300 feet in height and 25 feet in diameter, are levelled to the earth by means of augurs or saws and wedges, the bark of a foot or more in thickness is removed by crowbars, and the larger logs are shattered into workable fragments by the use of blasting powder or dynamite. In the face of such facts we need not hesitate to accept the statement that the slabs alone might satisfy the most ambitious of Eastern saw-mills!

The volume closes with concise descriptive lists of the more valuable forest trees with notes on their propagation and care, and an interesting chapter on the Federal and State reservations set apart within the United States. These reserves, aggregating about 50,000,000 acres, are carefully tabulated and mapped and show the importance attached by our neighbors to such national parks and reservoirs. No mention is made of similar parks and reserves in Canada, although those of Ontario alone cover an area of more than two and a half million of acres; indeed, if one were disposed to be critical it would be easy to point out other instances where the work might have been rendered more truly American by a fuller reference to things Canadian. It may well be, however, that our author considered such unnecessary in view of the similarity of conditions on either side of the boundary lines throughout.

In conclusion we heartily recommend this manual to all who feel an interest in a subject of vast and increasing importance. It is well written and well illustrated and cannot fail to hold the attention of any man or woman who wishes to keep abreast of the problems of the day. For holiday reading, when our thoughts turn readily to the woods and streams, nothing could be more appropriate, and a few hours spent with such a companion within touch of our waning forests could not fail to leave an impression incomparably better than can be expected from the ephemeral "literature" of the day. We trust that Prof. Gifford's book may secure a circulation in Canada in keeping with its conspicuous merits and thus aid in preparing the way for a rational appreciation of the aims and methods of modern forestry.

W. H. MULDREW.

THE WINNING OF RESPONSIBLE GOVERNMENT IN CANADA.

THE history of Responsible Government in Canada, when followed in detail, affords a more than usually interesting study in human nature, high and low. There are in it many wild and romantic passages, weird and mystic regions too, not a little tragedy, and a great deal of comedy, albeit commonly unconscious of itself. There are many awkward crises, with frequent heroic efforts at relief, too often failing for lack of organization, with consequent shipwreck on the rocks of jealousy and discord. There are many noble examples of disinterested and self-sacrificing public spirit, in which, however, zeal frequently outran knowledge, and ignored discretion. On the other hand, there was never any lack of a stolid and obstructive self-complacency which however much it might suffer discomfort in the body, could maintain a righteous serenity of mind impenetrable by any ray of light from the reality of things. And, finally, there may be traced a long and motley caravan of human figures, striving to get forward with shapeless loads of discordant ideas and impossible schemes. Yet there they go, down through the years of strife, elbowing forward, jostling and prodding each other with their ungainly burdens, the whole forming a fantastically solemn procession calculated, as Carlyle might say, to make the Gods laugh and weep in turn.

Nevertheless, out of this chaos, as we view it from beginning to end, we see gradually taking shape and consistency, the system of responsible government which we have with us to-day. And though to the eye of pure reason it may seem but a poor product for so long and so strenuous an effort, yet it has in it more of stability and promise than might be suspected by those who have not traced its growth through the past century.

The great French north-land of Canada was known to the more favoured English colonies to the south of it, as a bleak and barren land whence came no good thing, save only furs, whose very excellence confirmed the assumption as to its inhospitable climate. To the devout Puritan it was also the abode of Anti-Christ, whose devotees quite naturally associated themselves with the red demons of the forest, and together harried with flame, murder and nameless barbarities, the borders of the faithful servants of God.

Hence, jubilant were the sermons of triumph, and fervent the prayers of gratitude, which found voice when this stronghold of the enemies of God and man was reduced by Wolfe and Amherst. But, immediately recovering their keen scent for business, a number of

the colonists quickly followed the British flag to Quebec and Montreal, to take advantage of the rich fur trade which centred there, and the other commerce which depended upon that and the wants of the King's troops.

The French colonists of Canada, harried by official corruption, dragooned by arbitrary rulers, and impoverished by a long war, were thankful to find unexpected peace, protection and returning prosperity at the hands of that thitherto fabled monster, the English heretic. To accomodate themselves to English laws and institutions, seemed but a small price to pay for the unwonted benefits which came in their train. The change was at once entered upon, and most satisfactory progress was being made, when the troubles preceding the American Revolution, vouchafed to the official mind in Britain and America several revelations regarding the colonial system. The first important truth revealed was that a great mistake had been made in allowing so many of the free institutions of the mother country to be transferred to the colonies. The reputed mistake was strikingly illustrated in Canada, where the docility of the French Canadians in general, and the studied politeness and flattering reverence for the rank and person of the Governor, manifested by the Noblesse and the Clergy, contrasted very strongly with the independent bearing of the English element in the colony, who distracted the Governor with their clamour for English representative government and English rights and privileges.

Little wonder, then, that Sir Guy Carleton, the military governor of Canada at the time, should regard the Anglicizing of the French Canadians as nothing short of a disaster. Having reached this conclusion, he represented Canada to the Home Government as a country where no Englishman would ever permanently settle, so long as the more favorable regions to the south were open to him. Even if a few should seek the country for purposes of trade, it would be very unwise policy to permit them to corrupt the French Canadians with their notions of freedom and independence. Further, the French-Canadian and the Indian had obviously been the scourge which kept the English colonies in the past in close dependence upon the mother country. Though the rod had been transferred from French to English hands, it was none the less wise to keep it in repair, and, when occasion might require, it should be used discreetly, but with exemplary vigour. To retain this instrument in efficient form, to drive out the English already in the country and discourage future settlement, it was necessary to restore to Canada, while yet it was possible, its feudal system with its French laws and institutions,

and to foster the powers of the Noblesse and the Clergy, through whom the whole country could be controlled.

The idea struck the fancy of the Home Government, then at the height of its exasperation with the insolent colonies.

All measures then in force, and all others in course of preparation for the conversion of French Canada into an English colony, were suddenly abandoned, and the Quebec Act was passed, reserving only the British sovereignty and the English criminal law, which latter reservation Carleton soon bitterly lamented as the one mistake in the act. Yet, thanks to the policy of himself and others like minded, Carleton lived to see Canada almost the only British possession in North America, and, as Lord Dorchester, he found himself trying to undo his past by modifying as far as possible the fatal mistake which he had made in resisting the Anglicizing of Canada. But he found that the once plastic mass was hardening in his hands into ungainly shapes, neither French nor English nor yet a workable combination of the two, but, such as it was, resisting thereafter, like cold lava beds, the wearing influences of time.

Dorchester, however, like many others of the period, did not give up the idea that the old colonies had been lost by reason of the freedom and self-government which they had been permitted to enjoy. In this of course he was not far astray, provided the ideas of George III and his ministers, as to the proper functions of a colony, were to be accepted. But, instead of recognizing the unwisdom of attempting to turn the wheels of time backward, he firmly determined that for the future such freedom was to be studiously avoided in the remaining colonies. Hence while, with the coming of the Loyalists, he saw that the future of Canada was to be partly British at least, and that therefore the Quebec Act must be changed, yet he was very loath to regard the renewed clamour of the old English element, augmented by the Loyalists, for the freedom and self-government which they had enjoyed in the colonies whence they came.

In vain he remonstrated with their leaders, and protested to the Home Government. The English element clamoured the more urgently for the flesh pots of Egypt, a secession was threatened, and Dorchester, in the name of the Home Government, was fain to concede the quails of the Constitutional Act.

This act, it is true, granted representative government, but the greater part of the act is occupied in providing suitable checks upon its natural exercise and development.

Among the shreds of wisdom which were gleaned from the wreck of the British empire in America, by those who were chiefly responsible for its loss, the two following were prominent. First,

that in addition to allowing them too much freedom, the American colonies were lost for lack of the counterbalancing influence of an hereditary aristocracy; and secondly, that the Revolution would have been impossible had there been an established church and a state-supported clergy firmly planted throughout the colonies. Unchecked democracy and nonconformity having lost the old colonies, common prudence demanded that the remaining possessions should not be exposed to these dangers. Hence the Constitutional Act is chiefly concerned with provisions for an hereditary aristocracy, and an established church throughout the Canadas, especially English Canada. French laws and institutions and the Roman church, it was hoped, would sufficiently check any tendency to over rapid or unwise progress in French Canada. Having already despaired of the possibility of making a united people of the two races, it was decided to separate them as completely as possible, and permit each to pursue an independent course for the future.

Dwelling upon the checks and balances which had been provided in the act for the new colonies, Pitt, too busy elsewhere to give much attention to this question, seized upon its superficial resemblances to the home constitution and declared that the government was granting to Canada as nearly as possible an exact copy of the British constitution. Simcoe was much struck with this idea and in his first address to the parliament of Upper Canada declared that Canada was singularly blest in being granted a constitution which "is the very image and transcript of that of Great Britain," and there the phrase echoed and re-echoed for half a century, the *bête noir* of every governor, and the watchword of the reformers whose aims, however, were never very well defined even to themselves until Lord Durham's Report furnished them with the rallying cry of 'responsible government.'

With the passing of the Constitutional Act the British Government imagined that it had disposed of the troublesome Canadian question for an indefinite time. It had given the colony the British constitution, and what possible room could there be for future discontent. When, however, we come to look into it, and its effects in two quite different provinces, we find that Canada had received the British constitution in name only. The Governor, who represented the Monarch in the Canadian copy, was not a free person ruling over a country with which his whole life and interests were bound up. He was required to govern under a specific act of the Imperial Parliament, he was supplied, in addition, with a long document containing official instructions on a great variety of important subjects, and he had from time to time to seek and accept advice from the Colonial

Office on many special subjects. Again, unlike the king, he was not a person who could do no wrong because of the responsibility of his ministers to parliament, with the consequent necessity of ultimately accepting the advice or the resignation of his ministers, in connection with every vital measure. As a matter of fact the governor, while nominally the representative of the King, was really partly the officer of a party ministry at home and partly his own minister in the Canadian government. The governor was, therefore, a person who might very easily do wrong, and, as a matter of fact, was constantly accused by the representatives of the people, of doing a great deal of wrong. But, under the circumstances, neither had the governor the means of vindication, nor the people the means of redress.

During the formative period of representative government, the governors sent to Canada were usually military men, with little or no practical knowledge of the working of parliamentary government in Britain or elsewhere. As military men they had the simple narrow and rigid ideas and habits of their profession. Excellent qualities in their place, they were a most unfortunate substitute for the large and sympathetic knowledge of human nature, and the tact in dealing with the conflicting ideas, interests and whims of a miscellaneous body of men, which are indispensable in a statesman, under popular government. This is all the more significant when we remember that the early Canadian governors were required to be their own prime ministers.

The Legislative Council in Canada, the counterpart of the House of Lords in Britain, was intended to be filled in time with a native aristocracy, holding their seats in virtue of hereditary titles. In the meantime, however, as it turned out, for all time down to our own day, the Council was to be filled with the nominees of the Crown which meant, for the first half century, the nominees of the governor. But, as the governors changed frequently, while the Legislative Council remained permanent, the members holding their positions for life, when each new governor arrived he naturally looked to the members of the Council, who were also the greater part of his social atmosphere, for information and advice, and he did not look in vain. But the advice he received was inevitably coloured more or less strongly by the point of view and the special interests of the dominant persons in the Executive and Legislative Councils. When vacancies occurred in the Councils they were naturally filled with persons who were in favour with the leading element there.

The ministers, or Executive Councillors, who held their offices at the pleasure of the governor, being members usually of the Legislative Council as well, and having acquired what was admitted to be

a kind of vested interest in their offices, thus came to hold them at their own pleasure. Hence the ministers, who were by the constitution independent of the Assembly and nominally responsible to the governor only, turned out to be responsible to themselves alone. Self-interest and mutual appointment gradually welded them into a close corporation, named in Upper Canada the "Family Compact," and in Lower Canada the "Scotch Party." These organizations were soon so strong that, should a governor occasionally try to break away from their influence, they were able either to force his resignation or to secure his recall, as in the case of Governor Prescott.

How, then, was the representative part of the government related to this oligarchy of office holders and their allies?

All legislative acts had either to originate with the Assembly or receive its sanction. The Assembly enjoyed, therefore, a complete liberty of stating, repeating, and insisting upon what should be the legislation of the Province. But it had no guarantee whatever that its wishes would be respected. At the same time the Assembly had a complete veto on any legislative efforts on the part of the Council. In other words, the constitution made *possible* a deadlock between the legislative branches, which circumstances made *inevitable and permanent*, while no provision had been made for breaking that dead-lock even in the long run.

Now, to avoid possible misconceptions, it may be as well to say that though I think there can be no question as to the facts of our history fully justifying the ultimate triumph of responsible government in this country, yet one would be utterly wanting in impartial historic judgment who did not recognize that in many respects those who opposed this movement had much better ideas of what were suitable measures for the country than their opponents. Indeed had not responsible government resulted in the abandonment of much of the policy, and many of the special measures of those who championed it, the results would have been disastrous for the country. Many of the existing defects of our political life are due to the retention in modified form of several evil features introduced by those who stood out for self-government. However, we are at present tracing the growth of responsible government.

In Lower Canada, which started upon a basis of French-Canadian laws and institutions, the veto power of the Assembly secured the frustration of every attempt to depart from this French basis. On the other hand, the French-Canadians dared not, even had they desired, to attempt to develop their own system with a view to bringing it into something like harmony with modern life. They simply filled and held the entrenchments of the Quebec Act, antiquated by nearly

a century even at that time. There they defended, without question as to their intrinsic merits, their language, their laws, their economic methods, and their institutions, all summed up under the term their French Nationality, against every attempt to modernize, or, what was the same thing to them, to Anglicize them. It was to insure themselves against the innovating tendencies of the combined independent power of the Legislative and Executive Councils with the governor at their head, that they strove to secure responsible government, which would place the Executive in their hands.

But for the first half century of representative government in both provinces, while the Assembly had an effective veto on the legislative efforts of the Council, it had no direct control over the executive government. Such power as it had, centered in its legislative control over money bills. But this, which had proved so effective a device in the development of responsible government in Britain, was only partially available as a lever in Canada.

In the first place, a considerable portion of Canadian revenue depended upon certain imperial acts over which the representative assemblies had no control. Again, in their earlier days they had rashly made permanent certain revenue acts over which they could not regain control without the consent of the Legislative Council, which, of course, was steadily refused. Further, the Imperial Parliament provided certain grants from its own revenues, for the purpose of supplementing the Canadian supplies for objects in which the Home Government was specially interested. The Executive governments in the Canadas were thus able to carry out their favourite measures with the aid of the permanent funds at their disposal, while the Assemblies were compelled to vote fresh supplies for the support of those objects in which they were directly interested. Such, then, in outline, was the character of the representative government first introduced into Canada by the Constitutional Act of 1791. It is rather obvious that its resemblance to the British constitution was merely superficial, while it contained within it extensive possibilities in the way of legislative dead-lock, obstruction, and executive despotism benevolent or otherwise.

As I have indicated, these possibilities were early developed in the case of Lower Canada, where the Assembly was overwhelmingly French, as it had been intended to be, by the hiving of the French in that province. There, it had been said by those who carried the Constitutional Act, separated from the others and given their own institutions they can work out their own destiny. Yet the hope had also been expressed that seeing the painful contrast between their own antiquated system and the glorious freedom enjoyed under Brit-

ish institutions in Upper Canada, they would ere long, of their own free will, drop the French and adopt the British system. In any case, said Pitt, they must be permitted to choose for themselves. But the British governors of Lower Canada, after Lord Dorchester, saw fit to ally themselves with the able and enterprising leaders of the small British element in the province, in whose hands nearly all the foreign and more important domestic trade of the country centred. The small party controlling the Legislative and Executive Councils, and backed by the governors, sought to gradually convert lower Canada into a British province, at least as regards its commercial laws, its public institutions, and general economic relations.

That these innovations were in the interests of progress, enlightenment, and a British future for Lower Canada, few independent critics will care to dispute. But the Quebec Act and the Constitutional Act together, had distinctly guaranteed to the French-Canadians a French and not a British future, so long at least as the French-Canadians chose to adhere to it. It was therefore totally contrary to the spirit of the constitution, and hence unjust for the small English minority, however worthy personally, to attempt to ignore and override the unmistakable wishes of the great body of the French-Canadians, who tenaciously adhered to their independent nationality. The French-Canadians were also on both logical and constitutional ground when they sought to discourage English immigration into Lower Canada, when they refused to alter their system of land tenure, or permit the introduction of American forms of registration for land titles and encumbrances; and when they refused separate representation to the English settlements, or the use of English law in those settlements.

Finding that their overwhelming power in the Assembly did not secure them the control of the government of their province, the French-Canadian leaders declared their constitutional rights and guarantees to be violated, and finding the Executive Council to be the chief source of their wrongs, they turned the main force of their criticism upon it and demanded that it be made answerable to the Assembly. In other words, they demanded the introduction of the British system of responsible government, in order that they might thereby prevent any other British institutions from being forced upon them.

In Lower Canada, therefore, the whole question of representative government and its future turned upon a direct race issue. The opposition continued for years to increase in strength and bitterness until rebellion of some sort became the inevitable consequence of a

situation for which no amount of official peering into and reporting upon, had been able to do anything but aggravate.

In Upper Canada a crisis had been precipitated at the same period and might appear at first sight to have been of the same kind. But while in both provinces the representative assemblies were striving to gain control of the executive, yet the purposes in view were of the most opposite characters. In Lower Canada the French-Canadians, in seeking to resist all efforts to modify their national institutions, were maintaining a position of ultra conservatism. Whereas, in Upper Canada those who clamoured for responsible government were the most radical and democratic element in the province. It was a matter of common reproach that they took their doctrines of freedom and self-government, and many of their practical measures from the neighboring States. They also allied themselves for purposes of expression and agitation in the Imperial Parliament, with the radical leaders there.

In Upper Canada, again, there had been no natural cleavage on racial lines. As already indicated, the issue was developed between the popular party in the Assembly and the self interested oligarchy of office holders. The foundation for this was laid by Simcoe, the first governor, who composed the majority of his Legislative Council of the executive officials whom he had brought with him from England, or had already selected in Canada from officers lately associated with him in the Revolutionary War. By appointing these half-pay officers to life councillorships, and by virtually establishing a life tenure for most of them in the executive offices, Simcoe laid firmly the foundations of the Family Compact.

These men were encouraged by Simcoe to regard themselves as the foundation stones of that new aristocracy and hierarchy, whose future wealth, rank and influence were to be based upon the possession of large landed estates, secular and ecclesiastical, derived from the Crown, and who were to regard themselves as the bulwark of British supremacy in the future development of the country. These gentlemen took very seriously their dignities and the trust imposed upon them of supporting the Imperial interests. They proceeded, with lavish hand, to bestow upon themselves in the King's name, large tracts of the best land in the province, they carefully associated themselves with every important enterprise in the country, while they jealously guarded, as a close preserve, all offices of considerable emolument in the province, and otherwise so identified themselves with the King's interests, that to attack them was to attack the royal prerogative. To question their pretensions was disloyalty, to attack their privileges was treason, and to seek to overthrow their power

and subordinate the executive to the representative body, was republicanism and rebellion.

Thus it is to the period of these disputes that we must look for the origin of that common identification of loyalty with a single political party, and of that free use of the term disloyalty as a standard weapon of party warfare, which specially distinguishes Canada from other countries.

Let us see now, for a moment, how matters stood at the time when the first efforts at rebellion had been checked, and when the country had reached a stage where some settlement had to be made, or the whole colony given over to the horrors of a righteous war.

There had never been any organized leadership in either House of Assembly. Certain individuals, chiefly in virtue of their personal qualities, had acquired considerable influence and a certain following. In Quebec there was, of course, the racial cleavage, but it was not of the nature of a party division. The attitude was largely negative, and there was no party organization with a definite programme.

In Upper Canada there was even less organization in the Assembly. The majority was usually opposed to the Executive, but not all in the same degree, or for the same reasons. There was little parliamentary system, and no acknowledged leadership. Any one introduced bills, or moved resolutions on any kind of subject from a censure on the governor to a vote of supply. Bills were not seldom rushed through all their stages at one sitting.

Again, there was no unanimity as to what was included under the demand for responsible government. Some demanded an elective Council, others would be content with a nominated Council, provided the Executive were made responsible to the Assembly. Some were willing that a ministry, dependent upon the Assembly, should tender advice to the governor, leaving with him the option of accepting it or not. Others would permit the governor to tender advice to the ministers, leaving with them the option of accepting or rejecting it.

Up to the time of Governor F. B. Head, the Executive Council having been identified with the governor, either as servant or master, usually the latter, the attacks of the assembly had been directed almost entirely against it, all elements vying with each other in expressions of loyalty and attachment to the Sovereign and the Home Government. Governor Head, however, sought to get rid of this ancient feud by introducing to the Executive Council three prominent members of the popular element in the Assembly, Messrs. Dunn, Baldwin and Rolph. This concession was hailed with delight, until

it was discovered that the governor did not trouble his new ministers for advice on any vital questions and gave no indication of being influenced by such advice as he did receive. This discovery resulted in strong protests, and finally the resignation of the new ministers. Then for the first time in Canada the whole volume of accusation and criticism was turned upon the governor personally. The governor promptly took refuge behind his commission from the Crown, and bluntly declared that he was not responsible to anyone in Canada, but entirely to his Sovereign in Britain, which meant the Colonial Office. Thus the whole issue suddenly took the form of a direct question as to the nature and extent of the dependence of the government of Canada upon that of Britain. By his lack of tact the governor had brought the issue to this alternative: If Canada retains her connection with the mother country, then she must consent to be ruled by a deputy from the Colonial Office; if she insisted on having a real voice in her own government, she must sever her connection with Britain. That this issue was latent in all the disputes up to that time, in both provinces, is quite true; but now for the first time it was brought out with startling distinctness, and the rigid stand of the governor seemed to afford no escape from one or the other alternative. Even as stated by the Family Compact party the gravity of the situation was obvious. I quote from their reply to the proposed compromise suggested in Lord Durham's Report: "According to the present system, the governor of a colony exercises most of the royal functions, under the general direction of the ministers of the Crown; he is strictly accountable for his conduct, and for the use he makes of the royal authority; he recommends for office persons in the colony or appoints those selected by the minister; and he endeavours to conduct his government according to the policy of the Imperial Cabinet, with a view to the present prosperity and future greatness of a country in which Great Britain has a deep interest; and above all things, with the intention of preserving, against all opposition, the unity of the empire.

"According to the system proposed by the Earl of Durham, the advisers of the Lieutenant-Governor would not be officers who, in accordance with the policy of the Home Government, endeavour to aid the Lieutenant-governor in conciliating the affections of the people; but they must be the creatures of the prevailing faction or party in the Assembly; advising the governor altogether with a view to the wishes of the House for the moment, regardless of the opinions of the supreme parliament or those of the Imperial Cabinet and having (though nominally subordinate) the power of forcing all their measures upon the governor.

"The colonial governor must, in this case, be left without discre-



tion or responsibility, and follow whatever changes may occur; in his colony he could take no directions from the minister of the Crown, nor, indeed, communicate with the supreme government, unless in the terms dictated by his responsible advisers." * * * "Under such a system colonial dependence would practically be at an end." * * * "If England withdraw her influence, and leave her governors to be the shuttle between colonial parties, no loyalty now existing among any of these parties, will prevent their seeking another influence in the neighboring republic."

Thoroughly aroused at last by the first efforts of open rebellion, the Home Government suspended representative government in Lower Canada, recalled their governors, and sent out Lord Durham with extraordinary powers to unravel the tangle, and report on the condition of the country. His report is the most famous of all the documents of the kind dealing with Canada. It was not, however, in its details, the work of Lord Durham himself, but of his chief secretary Charles Buller, and expresses, in addition to his views, those of Wakefield and Molesworth. Durham himself, both from disposition and character, was unfitted for the work which he had undertaken. Like some gorgeous meteor he flared across the troubled sky of Canadian politics, and was suddenly snuffed out by an alarmed Home Government, leaving confusion worse confounded. The critical mission was declined by two distinguished statesmen in succession.

Things were already desperate, when the ablest man in the Cabinet, Lord John Russell, was hastily called to the Colonial Office, and from that day dates the modern colonial policy of Britain. A great man has an eye for great men. Lord Russell selected one of his younger colleagues, the Right Hon. Charles Poulett Thomson, soon afterwards Lord Sydenham, for the difficult mission to Canada.

Lord Sydenham's early training, his remarkable personal qualities, and wide experience of men and measures, fitted him admirably for the work before him. Yet all his qualities were taxed to the utmost by the problems which he had to face. I cannot attempt to recount here the marvels which this statesman, undoubtedly the greatest of Canadian governors, accomplished within two short years. Though a man in delicate health, he worked incessantly, yet the efficiency with which he covered so wide a range was due to the almost instinctive grasp of the essence of the situation, the capacity to pass rapid and sure judgment on affairs, to trace adequate and comprehensive plans, and select the means for their accomplishment, which are sure marks of greatness in a man of action. A most essential element in his success was his remarkable capacity for measuring and

managing men. A man of fascinating manners, infinite tact, delicate judgment, and endless patience, his power to influence men was soon the marvel of the country. He ranged the colonies from end to end, and sought out men of influence everywhere. He convinced the reasonable, flattered the ignorant, conciliated the bitter, and wheedled the obstinate, until he came to be regarded as simply irresistible. From Halifax to Detroit he travelled everywhere, saw everybody, kept a dozen correlated movements in hand, carried everything before him, and sealed his work with his death, a few weeks within two years of his landing at Quebec. What, then, had he accomplished as regards responsible government? As a great foundation fact he secured the re-union of the provinces, which experience had shown could not be accomplished by the British parliament alone. No less important, as making any permanent administration possible he effected a settlement of that most thorny of all questions, the Clergy Reserves. He made executive administration possible, by straightening out the indescribable tangle of the colonial finances, and redeeming the country from imminent bankruptcy. He also secured the establishment of a general municipal system. Finally in accomplishing these various measures after having cleared the ground, and made them possible, he introduced an organized system of parliamentary government, in connection with which was incorporated the principle of responsible government, with mutually responsible ministers, it being made necessary for the ministers to possess the confidence of a majority of the Assembly on all vital questions.

These remarkable changes would have been impossible without the hearty co-operation of Lord John Russell. A storm of indignation on the part of the Imperialists had to be faced, on accounts of this humiliating surrender of British rights and British power and prestige. Lord Russell, as prime minister, was able to put the finishing touch upon the system in 1847, by withdrawing the governor from any active participation in the introduction or discussion of purely colonial measures, thus permitting him to stand aloof from all colonial parties, and simply accept as his advisers those designated for office by a majority of the representatives of the people. This was accomplished under Lord Elgin, who left our system in this respect virtually as it stands to-day. Thus, through much tribulation, did the Canadian people secure in the end, that which is the first step towards real freedom, the priceless privilege of making their own mistakes.

ADAM SHORTT.

TITLES OF HONOUR IN CANADA.

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IN each and every of the colonies of Great Britain, whether with pardonable inaccuracy it be termed a nation and possess the highest type of an artificially created parliament, or be in the embryonic stage of colonial development known as a Crown Colony, administered by a Governor and appointive council—the fountain of honour is the same. And it may be instructive, and not wholly uninteresting, to give some account of the manner in which the prerogative of honour has been exercised with regard to that one of His Majesty's possessions which most nearly approximates to the national status.

TITLES OF CANADIAN STATESMEN.

The titles to which certain Canadian statesmen may lay claim in virtue of the official positions held by them are regulated by a series of despatches from various Secretaries of State for the Colonies, the gist of which seems to be as follows:

The Governor-General of Canada is entitled to be styled "His Excellency," and the Lieutenant Governors of the Provinces "His Honour." While there is no express prohibition against the continuance of these titles it is unlikely that they were intended to be retained by a Governor-General or a Lieutenant Governor on ceasing to hold office.^(a)

Privy Councillors of Canada are to be styled "Honourable" and *for life.* ^(a)

The Solicitor General, the Controller of Customs and the Controller of Inland Revenue are entitled to be styled "Honourable"

(a) DESPATCH, 24TH JULY, 1868.

Downing Street, 24th July, 1868.

MY LORD,—

In consequence of the confederation of the British provinces, some revision of the former usage there, about titles, has become necessary and I have the honour to inform you that Her Majesty has been pleased to approve of the adoption of the following regulations:

1. The Governor General of Canada to be styled "His Excellency."
2. The Lieutenant Governors of the provinces to be styled "His Honour."
3. The Privy Councillors of Canada to be styled "Honourable" and *for life.*
4. Senators of Canada to be "Honourable" but only during office, and the title not to be continued afterwards.
5. Executive Councillors of the provinces to be styled "Honourable" but only while in office, and the title not to be continued afterwards.
6. Legislative Councillors in the provinces not in future to have that title; but gentlemen who were Legislative Councillors at the time of the Union, to retain their title of "Honourable" for life.
7. The Presidents of the Legislative Councils in the provinces to be styled "Honourable" during office.
8. The Speakers of the Houses of Assembly in the provinces to be styled "Honourable" during office.

I have, etc.

Buckingham & Chandos.

Governor The Right Honourable Viscount Monck, &c., &c.

while in office.^(b) The two Controllershships ceased, however, to exist in 1897 by reason of the revival of the offices of Minister of Customs and Minister of Inland Revenue which had been abolished in 1887.^(c) The Controllers of Customs and Inland Revenue who held office between the 2nd June, 1887, and 29th June, 1897, *unless entitled to the distinction by some other right* would not now be "the Honourable," while the Ministers of Customs and Inland Revenue are Privy Counsellors and bear the title for life.

Senators of Canada, Executive Councillors of the Provinces, the Presidents of the Legislative Councils and Speakers of the Houses of Assembly in the Provinces are to be styled "Honourable" but only *while in office* "the title not to be continued afterwards."^(d)

Legislative Councillors in the Provinces who were such on the 8th day of July, 1867, are to be styled "Honourable" for life, but Legislative Councillors who became such since that date are not to be styled "Honourable" even while in office.^(e)

The omission of the Speaker of the House of Commons from the list of office bearers in Canada who are entitled to be called "Honourable" is understood to have been "purely accidental,"^(f) and the omission is said to have been remedied by a "circular" despatch which has been interpreted to mean as far as Canada is concerned that the Speaker of the House of Commons may on quitting office, after three years' service, be permitted to *retain* the title of "Honourable" for life, when personally recommended by the Governor-General of Canada.^(g) It may be asked, however, is there anything to *retain* if no-

(b) DESPATCH FROM MARQUESS OF RIPON TO EARL OF ABERDEEN

Downing Street, 29th December, 1893.

MY LORD.—

I have the honour to acknowledge the receipt of your despatch, No. 292, of the 21st of November, and I have to signify to you Her Majesty's approval of the precedence which your Ministers propose should be assigned to the Solicitor General, the Comptroller of Customs, and the Comptroller of Inland Revenue, namely, in the above order as I understand, and next after members of the Privy Council not of the Cabinet, and of their being styled "Honourable" while in office. I have, etc.,

Governor-General, &c., &c., &c. RIPON.

(c) See 60-61 Vict. (Dom.) Cap. 18, and 50-51 Vict. (Dom.) Cap. 11.

(d) *Ibid.* supra despatch 24th July 1868.

(e) *Ibid.*

(f) Todd Parl. Govt. in British Colonies, p. 322 note.

(g) DESPATCH 10TH MARCH, 1894.

Downing Street, 10th March, 1894.

SIR,—

I have recently received from the Governor of New South Wales a despatch enclosing for my favourable consideration, a copy of a letter from the Speaker of the Legislative Assembly, suggesting that the title of "Honourable" might be retained by Presidents of the Legislative Council and Speakers of the Legislative Assembly on quitting office, after they have served three years in their respective offices, as in the case of Executive Councillors.

I concur in the suggestion, and shall therefore be prepared in future to submit for the approval of the Queen, the recommendation of the Governor of any Colony having responsible government, that the President of the Legislative Council (if necessary) or the Speaker of the Legislative Assembly, may on quitting office after three years service in their respective offices, be permitted to retain the title of "Honourable."

I have the honour to be, Sir,

Your most obedient and humble servant,
The Officer administering the Government of Canada.

RIPON.

thing was granted or conferred? But it should be stated that the Imperial authorities have at least impliedly recognized the Speaker's right to the title by prefixing it to the names of some of the holders of that high office upon whom Imperial honours have been from time to time conferred.

It was unnecessary to provide expressly for the President of the Senate unless to permit of the retention of the title after ceasing to be a member of the Upper House by resignation or disqualification, for otherwise he is a "Senator of Canada" for life and as such is entitled to be called "Honourable."

Although for many years it was thought that the various official persons upon whom the title of "Honourable" was conferred were permitted to use the title only within the Dominion of Canada, it has been definitely settled that they may enjoy it throughout all His Majesty's dominions for so long as they may be entitled to the distinction.^(h)

Probably the point of chief importance to be noted is that it is only members of His Majesty's Privy Council for Canada and Legislative Councillors of the old Provinces who were such at Confederation, who have for life an indefeasible right to be called "Honourable," and that with regard to the other persons by whom the dignity is permitted to be borne the Imperial authorities were not content merely to say that it should be held "while in office," but, as if to leave no doubt of its temporary and perhaps evanescent character, added the most positive prohibition against its continuance afterwards. Events in more than one of the Provinces of the Dominion have given rise to the enquiry as to whether some such provision⁽ⁱ⁾

(h) DESPATCH FROM MARQUESS OF RIPON TO EARL OF DERBY.

Downing Street, 15th June, 1893.

MY LORD,—

The title of "Honourable" as conferred by the Queen in the Duke of Buckingham's despatch, No. 164, of the 24th July, 1868, upon certain persons in the Dominion of Canada, and as appertaining to members of Executive and Legislative Councils in other colonies possessing responsible Government, has generally been understood not to run beyond the particular colony: but in these cases Her Majesty has now, on my recommendation, been graciously pleased to approve of its use and recognition throughout her dominions.

In the Duke of Buckingham's despatch of the 24th July, 1868, there was no express confinement of the use of the title within the Dominion of Canada, and you will understand that the persons upon whom it was thereby conferred will enjoy it throughout Her Majesty's Dominions for so long as they may be entitled to it.

I have, etc.,

RIPON.

Governor-General, &c., &c.

(i) Prior to confederation the rule had been that Executive Councillors in colonies possessing responsible government ceased on retirement from office to be styled "Honourable." An exception however was made in regard to persons who had served as Councillors for any considerable time or with peculiar distinction, who might upon the recommendation of the Governor of the colony and by command of the Sovereign be permitted to retain the title "Honourable" within the colony after retirement from office. This rule was subsequently modified by declaring that such retired Executive Councillors only as had held office for three years might be recommended to Her Majesty by the Governor for permission to retain the title for life. This despatch is still in force with regard to some of the Colonies, but has never been applied to Privy Councillors as being unnecessary and the express prohibition in the despatch of 24th July, 1868, prevents its application to Provincial Executive Councillors, even if otherwise applicable, which is doubtful. See Todd's Parl. Govt. in British Colonies, page 319 and 320. See also despatch of 14th November, 1896, in which a provision was made for the retention of the title of "Honourable" by Legislative Councillors in colonies possessing responsible government, who had served as such for ten consecutive years. And see also despatch of 10th March, 1894, *supra*.

as exists in many of the smaller Colonies of the Empire, permitting under certain well defined circumstances the retention of the title by Executive Councillors, might not be a highly reasonable and proper one to make with regard to Executive Councillors in the Provinces of the Dominion of Canada, for it may fairly be asked, Why should a man who probably has been a member of a Provincial Government for many years and during many Parliaments (or, lest we give offence, Legislatures), who has risen by his abilities and energies to the highest places in the councils of his province, who during all that time has borne with honour and distinction the title of Honourable, be deprived on retirement of the one titular distinction which the continued confidence of his constituents has, with His Majesty's sanction, bestowed upon him. Within their own sphere of topical jurisdiction (which, if the constitutional victories in the courts continue, bids fair to be much enlarged) the Provincial Governments are of as much importance to the confederation as the Dominion Government itself, and although very few will be inclined to insist that a Minister with a merely nominal official existence has any claim, moral or otherwise, to the distinction, it would seem unjust that a Provincial Minister who has been in many parliaments should be stripped of his dignity while the appointee of a moribund Federal Administration, whose accession to power is due entirely to the expediency of the moment, is entitled to the honour for life.

ECCLIESIASTICAL DIGNITARIES.

In Canada and several of the other colonies of the Empire a somewhat vexed question has arisen, the dispute as to which has not been confined to ecclesiastical circles, as to the right of colonial bishops to the title of "lord bishop" or to be styled "my lord" or "your lordship." Soon after the first appointment by the Imperial Government of colonial bishops in the West Indies, the authorities agreed to allow these dignitaries to be styled "my lord." This practice became general; but a reference to the letters patent issued to colonial bishops in North America and in Australia up to 1866 (when the issue of such letters patent was discontinued in consequence of the decision in the case of Bishop Colenso of Natal) shows that no uniform practice was followed. In some of the letters patent the title of "lord" was appended to that of bishop, while in others it was omitted. In Lord Kimberley's despatch of September 30th, 1881, which was issued in consequence of certain disputes as to the precedence of bishops of the Roman Catholic and Anglican communions, it was laid down that no colonial bishop is entitled to either territorial designation or to be addressed as "lord Bishop." This despatch had the ef-

fect of abrogating the despatch of Earl Grey issued in 1847 to colonial governors authorizing Roman Catholic prelates to be officially addressed by the title of "your Grace" or "your Lordship," as the case might be, having regard to the positions held by them in the Episcopacy. The result is that no colonial bishop is entitled to be addressed officially by government other than as "right reverend." It would seem, however, that no one would attempt to question the right of any bishop to claim from the adherents of his own church (in which undoubtedly he is "dominus") the designation of "your Grace" or "my Lord" or "your Lordship"; and indeed "this puerile dispute," as Stubbs calls it, could not have arisen had it been borne in mind that "the title of 'Lord' does not in England imply a dignity created by the Crown, but is simply a descriptive or honorary appendage to some other dignity." Stubbs adds that "the title of Lord Bishop belongs to all bishops in all churches, and not merely to those who possess a seat in the English House of Lords; nor has it anything to do with the royal prerogative of conferring titles, not being a recognized grade of peerage." As a very learned Canadian writer adds, "If this be correct, and few would be disposed to question the accuracy of so learned and painstaking a writer as Stubbs, it disposes of this vexed question in a very satisfactory manner."

THE JUDICIARY.

By universal usage throughout the Provinces of the Dominion the title of "Honourable" has always been conceded to the Judges, whether Chief Justices or puisne Judges of the Superior Courts of law and equity of the various provinces, as well as to those of the Supreme and Exchequer Courts of Canada. The right to this title has been assumed rather than based upon any well defined authority and chiefly from analogy to the usage in England, where, however, the right is indisputable. It would seem, however, that neither usage in Canada nor analogy to British practice could give to colonial Judges a title which, as has already been seen in regard to Canadian Privy and Executive Councillors, required the sanction of Imperial authority. The chief basis of a claim founded on Imperial authority to the use of the title is the despatch of August 29th, 1877, from Lord Carnarvon to the Australian governors by which it was decided that retired judges of the Supreme Courts in Australia should *retain* the title of "Honourable" for life *within the colony*, from which it has been inferred that a similar right exists in Canada and the other colonies as well as in Australia. It is, however, worthy of notice that the compilers of the official lists of honours published from time to time in the London Gazette and the London Times,

while carefully according the title of "Honourable" to Canadian Privy Councillors and the Speakers of the House of Commons of Canada as well, are careful to style Canadian Chief Justices by the worshipful terms of "Mr." and "Esquire," and indeed the letters patent creating many of these gentlemen Knights of the United Kingdom have so designated them. It will be noticed, also, that the Judges are not referred to in Lord Ripon's despatch of 1893, already mentioned, which gave Her Majesty's permission to the personages therein mentioned to bear the title in all the British Dominions and not simply within the colony. It should also be remarked that such excellent authorities as the "Colonial Office List" and "Whitaker's Peerage" lay it down as a rule that the designation of a Judge in a Colonial Supreme Court is "His Honour" and even this locally only. It would seem however that there is a conflict of usage upon the subject inasmuch as the former of these authorities, while laying down this rule, rather inconsistently affixes the titles of "Honourable" to the names of the Chief Justices and Justices of the Superior Courts in the various Provinces of the Dominion in the judicial lists, although carefully omitting it in the lists of Colonial honours. Why should there not be some definite practice authoritatively established by the Imperial authorities upon the subject, and the custom or usage of according to these learned gentlemen the title of "Honourable" confirmed?

The application to a county Judge of the term "His Honour," and to a magistrate "His Worship" with the correlatives of "your Honour" and "your Worship" should probably be mentioned although these terms are not titles of honour in the sense in which that expression is properly understood, but are "titles of worship" or of respect or address. The practice also of addressing High Court Judges when on the Bench as "your Lordship" or "my Lord" is commendable on a similar ground, not as implying that the person so addressed is a peer for as has already been seen the term "Lord" is not applicable to peers alone but is properly used as a mode of address of certain other official persons.

ESQUIRES AND GENTLEMEN.

The title of worship, or as some authorities term it "the title of dignity," of "Esquire" and its somewhat lower title of worship of "Gentleman" have become of recent times so divorced from their original signification that although there may still be well defined rules for determining the strict right to their use it will in this country be found hardly profitable, or indeed wise, to discuss them. It will occur to some, however, as being somewhat unfortunate that in Eng-

land as well as in Canada the title of "Esquire" should not have been preserved in its proper use and application, for indeed a man might as well assume the dignity of a Knight as to usurp that of an Esquire. Those who care to ascertain the persons entitled as of right to the title of "esquire" will have little difficulty in finding at least some rules fairly well defined for its application. But when the term "Gentleman" is asserted to mean "one who has no visible means of support" the hopelessness of getting back to principles or rules is apparent.

IMPERIAL TITLES CONFERRED PRIOR TO CONFEDERATION.

Before confederation titular distinctions were comparatively rare in Canada, and if we except the Nova Scotia baronets (whose titles by the way have recently received some additional confirmation) in any part of the North American colonies; and although the Constitutional Act of 1791 expressly declared that the Sovereign might, if he thought proper, annex hereditary titles of honour to the right of being summoned to the Legislative Council in either Province, no titles were ever conferred under its authority. Prior to that time the first American Colonist who was made a baronet was Colonel Sir William Pepperell Bart., who attained considerable fame in the capture of Louisburg in 1745. In 1755 a baronetcy was conferred on General (Sir) William Johnson, (Bart.,) Superintendent General of Indian affairs for the northern parts of North America for George II, a celebrated English commander who rendered distinguished services to the British in subduing and civilizing the wild Indian tribes upon the Mohawk. Mr. Chief Justice Strange shortly after his retirement from the Nova Scotia Bench was knighted in 1797 he having gone to England and while there appointed Governor of Bombay. Colonel the Honourable Charles Michel d'Irumberry de Salaberry, seigneur de Chambly et de Beaulac, surnamed the Canadian Leonidas, who organized and commanded the Voltigeurs and attained great fame by his services in the war of 1812, was created a Companion of the Bath in 1817. Sir David William Smith, Bart., who was deputy-judge advocate of Upper Canada, surveyor general of lands, one of the trustees for the Six Nations, an Executive Councillor, member of the committee for administering the Government in the Governor's absence, a member of the three first Canadian Parliaments and twice speaker of the House of Assembly, received his Baronetcy in 1821. In 1829 on his retirement from the Chief Justiceship of Upper Canada, Sir William Campbell, Knt. (then the Honourable William Campbell), who had been Attorney General of Cape Breton, a puisne Judge in Upper Canada, and who succeeded Mr.

Chief Justice Powell, was created a Knight Bachelor. Sir Daniel Jones, (then Daniel Jones, Esquire), while on a visit to England as agent for the "Brockville Loan and Trust Company" was in 1835 created a Knight Bachelor, being the first native of the Province of Upper Canada to receive the honour. Colonel the Honourable Allen Napier MacNab, Bart., M.L.C., Aide-de-Camp to the Queen, of Dundurn, Hamilton, was made a Knight Bachelor in 1838 and was created a baronet on his retirement from the office of Premier in 1856. The Honourable Sir James Stuart, Bart., who at the age of twenty-five was Solicitor-General for Lower Canada, and afterwards Attorney General and Chief Justice, received his baronetcy in 1841. The Honourable Sir John Beverley Robinson, Bart., who at the even earlier age of 21 was Attorney General of Upper Canada, (holding the office temporarily, until the release from a French prison of the Honourable D'Arcy Boulton), then Solicitor General, then again Attorney General, and from 1841 to 1862 Chief Justice of Upper Canada (i.e. Chief Justice of the King's Bench), was in 1850 made a Companion of the Bath, and in 1854 after, as it is said, having "declined Knighthood" was given the baronetcy which is now held by his grandson, Sir John Beverley Robinson, Bart., at present residing in New York. The Honourable Sir Louis Hippolyte Lafontaine, Bart., Attorney General of Lower Canada 1842-3 and 1848-1851, and Chief Justice 1853-1864, received his baronetcy in 1854. In the same year (1854) the following were created Companions of the Bath: The Honourable Robert Baldwin, Solicitor General Upper Canada, 1841, Attorney General 1842-3 and again from 1848-1851, and who for many years was Treasurer of the Law Society of Upper Canada; the Honourable William Henry Draper, Attorney General U. C. 1841-2 and 1844-7, puisne Judge of the Court of Q. B. (U.C.) 1847-1856, Chief Justice of the Common Pleas 1856-1863, Chief Justice of Upper Canada (Queen's Bench) 1863-1868, Chief Justice of Ontario 1868-1877; and Major (afterwards Lt.-Colonel) Thomas Edmund Campbell, Sir William Edmond Logan, Knt., an eminent and distinguished geologist, head of the Canadian Geological Survey from 1842 to 1869, and first President of the Canadian Institute, received his knighthood in 1856, having in 1851 represented Canada at the great exhibition in London, and in 1855 at the Industrial Exhibition at Paris, where he was also made a knight of the Legion of Honour. Sir James Buchanan Macaulay, C.B., puisne judge, Queen's Bench, U.C.--1849, Chief Justice Common Pleas, U.C., 1850-1856, was knighted and made a Companion of the Bath in 1859, and in the same year Chief Justice Sir Brenton Halliburton of Nova Scoti received the honour of knight-

hood, being the first acting judge of that Province to receive the dignity. Colonel the Honourable Sir Etienne Pascal Tache, A.D.C. to the Queen, at different times Chief Commissioner of Public Works, Receiver General, Commissioner of Crown Lands, Speaker of the Legislative Council, and subsequently Premier of Canada, received his knighthood in 1858. Sir Samuel Cunard, Bart., "the father of steam navigation on the Atlantic," was created a baronet in 1859. The Honourable Sir Narcisse Fortunat Belleau, Speaker of the Legislative Council 1857-1862, Minister of Agriculture 1862, Premier and Receiver General 1865, Senator of Canada 1867, Lieutenant Governor of Quebec 1867 to 1873, and Sir Henry Smith, Speaker of the Legislative Assembly 1858-1861, were created Knights Bachelors in 1860, the former subsequently in 1879 receiving the additional honour of a K.C.M.G. In 1862 the Honourable Francis Hincks (afterwards Sir Francis) who from 1842-3 and from 1848-1854 was Inspector General (Minister of Finance), and Henry Black, Judge of the Vice-Admiralty Court of the City of Quebec, 1841-1873, were made Companions of the Bath.

IMPERIAL TITLES UNDER CONFEDERATION.

Imperial Privy Councillors.

Since Confederation distinguished marks of royal favour have been conferred on "not a few" Canadians. Five gentlemen of Canada, three of them being Prime Ministers, have been made members of His Majesty's Most Honourable Privy Council, in addition to other distinctions of a high character, viz., the Right Honourable Sir John Alexander Macdonald, G.C.B., who was made a K.C.B. in 1867, a "Right Honourable" in 1879 and a G.C.B. in 1884; the Right Honourable Sir John Rose, Bart., G.C.M.G., who held various offices in Canadian Governments, was Dominion Minister of Finance 1867-1869, and who received great praise for the services rendered by him in connection with the tour of the King, when Prince of Wales, through Canada, and who afterwards became Receiver General of the Duchy of Cornwall, received his K.C.M.G. in 1870, his baronetcy in 1872, his G.C.M.G. in 1878, and was made a Privy Councillor in 1886; the Right Honourable Sir John Sparrow David Thompson, K.C.M.G., who received his K.C.M.G. in 1888 was made a Privy Councillor in 1893; the Right Honourable Sir Samuel Henry Strong, Knt., Chief Justice of Canada, who received the honour of knighthood in 1893, was made a Privy Councillor in 1897; and the present Premier of Canada, the Right Honourable Sir Wilfrid Laurier, G.C.M.G., who received his G.C.M.G. and was made a Privy Councillor in the Jubilee year of 1897.

Peerages.

Prior to the year 1891 no Canadian had ever been raised to the dignity of the Peerage. There had been a few instances in which gentlemen living in Canada, and at least one native Canadian, had found themselves advanced to that honourable distinction by reason of the death of relatives, but at present it is intended to deal only with conferred honours. Since then one Canadian lady has been made a peeress in her own right, and three Canadian gentlemen have been created peers, in the case of one of whom, however, Canada can claim very little of the *kudos* in as much as the recipient of the honour had for many years been a distinguished Imperial Civil Servant. In 1891 on the death of the Right Honourable Sir John Alexander Macdonald, G.C.B., Prime Minister of Canada, his widow, Lady Macdonald, was made a Baroness in her own right with the title of Baroness Macdonald of Earnscliffe. In the same year Sir George Stephen, Bart., the first President (to 1888) of the Canadian Pacific Railway, who received his baronetcy in 1886, was raised to the peerage of the United Kingdom as the Right Honourable Baron Mount Stephen. In the Jubilee year (1897) Sir Donald Alexander Smith, High Commissioner for Canada in England, 1896 to the present time, who in 1886, for services in connection with the C.P.R. of which he was a Director, had been made a K.C.M.G., and in 1896 a G.C.M.G., was created a peer of the United Kingdom with the title of the Right Honourable Baron Strathcona and Mount Royal, and in 1900 a new patent was authorized to be issued to him with remainder to his daughter, in default of male issue. In 1898 Sir Arthur Laurence Haliburton, son of Mr. Justice Haliburton, of the Supreme Court of Nova Scotia, Imperial Under Secretary for War, who was made a C.B. in 1880, a K.C.B. in 1885, and a G.C.B. in 1887, was raised to the peerage as the Right Honourable Baron Halliburton.

Baronetcies.

In addition to the baronetcies already mentioned there have been the following creations: The Honourable Sir George Etienne Cartier, Bart., Provincial Secretary 1855-6, Attorney General Lower Canada 1856-62 (with short break in 1858) and 1864-67, Minister of Militia and Defence 1867-1873 (created a Baronet 1868); the Honourable Sir Charles Tupper, President of the Privy Council of Canada 1870-2, Minister of Inland Revenue 1872-3, of Customs 1873, of Public Works 1878-9, of Railways and Canals 1879-84, High Commissioner for Canada in the United Kingdom 1884-7 and 1888-1896, Minister of Finance 1887-8, Premier of Canada 1896. (Bart. 1888, G.C.M.G. 1886, K.C.M.G. 1879, C.B. 1867). In addition to these it

may be well to mention the present Baronets who have succeeded to the dignity by inheritance from ancestors to whom reference has already been made. Sir William George Johnson (4th Bart.) succeeded in 1813 to the Johnson baronetcy conferred upon General Sir William Johnson in 1755, Sir Bache Edward Cunard (3rd Bart.), succeeded in 1869 to the baronetcy conferred upon the "father of steam navigation on the Atlantic," Sir William Rose (2nd Bart.), succeeded his father the Right Honourable Sir John Rose in 1888, Sir John Beverley Robinson (4th Bart.) succeeded in 1901 to the baronetcy conferred upon Chief Justice Sir John Beverley Robinson in 1854, and Major-General Sir Edward Andrew Stuart (3rd Bart.), succeeded in 1901 to the baronetcy conferred upon Chief Justice Sir James Stuart in 1841 (*vide supra*).

G.C.B.'s and K.C.B.'s.

The only gentleman who for services distinctly Canadian has been raised to the high honour of a Knight Grand Cross of the Most Honourable Order of the Bath or the slightly lower dignity of a Knight Commander of that Order was the Right Honourable Sir John Alexander Macdonald, G.C.B. There have been a number of Canadians who have entered the Imperial Services as Naval or Army officers who have reached the height of these distinctions but they are not within the purview of this article. It may, however, not be uninteresting to name in this connection two of the conspicuous instances, one in the Army and the other in the Navy. General Sir William Fenwick Williams, Bart., G.C.B., the "Hero of Kars," Commander of the forces in Canada and Governor of Nova Scotia (his native Province) at the time of Confederation, was made a K.C.B., and a Baronet in 1856, and in 1871 was made a Knight Grand Cross of the Bath. Admiral Sir Provo Wallis, G.C.B., A.D.C. to Queen Victoria 1847-51, also a native Nova Scotian, who at the time of his death, which occurred only recently, was the Senior Admiral of the Fleet, was at different times made a K.C.B. and a G.C.B.^(j)

G.C.M.G.'s.

The Most Distinguished Order of Saint Michael and Saint George has for a number of years been the order whose Chancery has been used as the main source from which Colonial statesmen have received titular distinction at the hands of the Sovereign, the order having in fact been enlarged for the express purpose of their

(j) For the names of other Canadians who have distinguished themselves in the British Army and Navy, reference may be had to Mr. Burnham's book, "Canadians in the Imperial Service," the pamphlet issued in 1866 by Mr. Morgan on "The Part British-Canadians have Won in History," the recent work on the "Founders of Nova Scotia," by Sir John Bourinot, and the "Proceedings of the Canadian Military Institute for 1900," compiled by Mr. L. Homfray Irving.

admission. The following Canadian gentlemen have been created, or promoted to be, ordinary members of the first class of this Order of Knights Grand Cross: The Honourable Sir Alexander Tilloch Galt, Minister of Finance (Canada) 1858-1862 and 1864-7, (Dominion) 1867, High Commissioner for Canada in the United Kingdom 1880-1883, was made a K.C.M.G. in 1869, G.C.M.G. 1878; the Right Honourable Sir John Rose, the Right Honourable Sir Wilfrid Laurier and the Honourable Sir Charles Tupper, Bart. (*vide supra*); the Honourable Sir Richard John Cartwright, Minister of Finance 1873 to 1878, Minister of Trade and Commerce 1896 to the present, K.C.M.G. 1879, G.C.M.G. 1897; the Honourable Sir Oliver Mowat, Provincial Secretary 1858, 1863-4, Vice-Chancellor 1864-1872, Prime Minister and Attorney General of Ontario 1872-1896, Senator, Minister of Justice and Attorney General of Canada 1896-7, Lieutenant-Governor of Ontario 1897 to the present time, was made a K.C.M.G. in 1892 and a G.C.M.G. in 1897, *being the only member of a Provincial Ministry who while an Executive Councillor has received any such Imperial honour since Confederation.*

K.C.M.G.'s.

Besides the K.C.M.G.'s already referred to, the following gentlemen have been made ordinary members of the second class or Knights Commanders of the Order: The Honourable Sir Albert James Smith, Minister of Marine and Fisheries 1873-8, K.C.M.G. 1878; the Honourable Sir William Pearce Howland, Minister of Finance 1862-3, Receiver General 1863-4, Postmaster General 1864-1867, Minister of Finance 1867-8, Lieutenant-Governor of Ontario 1868-73, C.B. 1867, K.C.M.G. 1878; the Honourable Sir Samuel Leonard Tilley, Minister of Customs 1867-73, Minister of Finance 1873 and 1878-85, Lieutenant-Governor of New Brunswick 1873-8 and 1885-93, C.B. 1867, K.C.M.G. 1879; the Honourable Sir Alexander Campbell, Commissioner of Crown Lands 1864-7, Senator 1867-1887, Postmaster General 1867-73, 1879-80, 1880-1, 1885-7, Minister of the Interior, &c., 1873, Receiver General 1878-9, Minister of Justice 1881-5, Lieutenant-Governor of Ontario 1887-1892, K.C.M.G. 1879; the Honourable Sir Hector Louis Langevin, Secretary of State of Canada, Registrar General and Superintendent General of Indian Affairs 1867-9, Postmaster General 1878-9, Minister of Public Works 1869-73, 1879-91, C.B. 1868, K.C.M.G. 1881; the Honourable Sir David Lewis Macpherson, Senator and Privy Councillor of Canada 1867-1896, Member of Cabinet without portfolio and Speaker of the Senate 1880-3, Minister of the Interior 1883-5, K.C.M.G. 1884; the Honourable Sir Adams George Archibald, Secretary

of State for the Provinces 1867-8, Lieutenant-Governor of Manitoba and North West Territories 1870-2, Judge in Equity, Supreme Court of Nova Scotia, 1873 for ten days, Lieutenant-Governor of Nova Scotia 1873-83, C.M.G. 1872, K.C.M.G. 1885; the Honourable Sir Joseph Phillippe Rene Adolphe Caron, Minister of Militia and Defence 1880-92, Postmaster General 1892-6, K.C.M.G. 1885; Sir James Alexander Grant, M.D., M.P. for 11 years, Scientist, &c., K.C.M.G. 1887; Sir Joseph William Truch, Chief Commissioner of Lands and Works and Surveyor General of British Columbia 1864-71, Lieutenant-Governor B. C. 1871-6, and Resident agent of Canada for British Columbia 1879-89, C.M.G. 1877, K.C.M.G. 1889; Colonel Sir Casimir Stanislaus Gzowski, Chief Engineer St. Lawrence and Atlantic Railway, President of the Dominion Rifle Association, A.D.C. to Queen Victoria from 1879 to his death, Administrator of the Government of Ontario 1896, K.C.M.G. 1890; the Honourable Sir John Joseph Caldwell Abbott, Senator and Privy Councillor of Canada 1887-1893, member of Cabinet without portfolio 1887-91, Prime Minister and President of the Privy Council 1891-2, K.C.M.G. 1892; the Honourable Sir John Carling, Postmaster General 1882-5, Minister of Agriculture 1885-1892, Member of Cabinet without portfolio 1891-2. Senator 1891-2 and 1896 to present time, K.C.M.G. 1893; the Honourable Sir Charles Hibbert Tupper, Minister of Marine and Fisheries 1888-1894, Minister of Justice and Attorney General 1894-1896, Solicitor General 1896, K.C.M.G. 1893; Sir William Cornelius Van Horne, President of the Canadian Pacific Railway, K.C.M.G. (Honourary Member) 1894; the Honourable Sir Mackenzie Bowell, Minister of Customs 1878-92, Minister of Militia and Defence 1892, Minister of Trade and Commerce 1892-4, Prime Minister and President of the Privy Council 1894-6, Senator 1892 to the present time, K.C.M.G. 1895; (the Honourable) Sir John Christian Schultz, Member of several Parliaments, Senator 1882-8, Lieutenant-Governor of Manitoba 1888-1895, K.C.M.G. 1895; the Honourable Sir Henri Gustave Joly de Lotbiniere, Premier and Commissioner of Public Works, Quebec, 1878-9, Leader of the Opposition, Quebec, 1879-83, Controller of Inland Revenue (Dominion) 1896-7, Minister of Inland Revenue 1897-1900, Lieutenant-Governor of British Columbia 1900 to the present time, K.C.M.G. 1895; the Honourable Sir Joseph Adolphe Chapleau, Secretary of State of Canada and Receiver General 1882-1892, Minister of Customs 1892, Lieutenant-Governor of Quebec 1892-98, K.C.M.G. 1896; the Honourable Sir George Airey Kirkpatrick, Speaker of the House of Commons 1883-7, Member Privy Council of Canada from 1891, Lieutenant-Governor of Ontario 1892-7, K.C.M.G. 1897; Sir Sandford Fleming, Engineer in

charge of Government Railways 1863-80, Chancellor of Queen's University since 1880, President of Royal Society of Canada 1888-9, delegate to International Prime Meridian Conference at Washington 1884, to Colonial Conference in London 1887 and in Ottawa 1894, on special mission to Hawaii 1894 negotiating for landing place for Pacific cable, C.M.G. 1877, K.C.M.G. 1897; the Honourable Sir Louis Henry Davies, Premier, Attorney General and President of Executive Council, Prince Edward Island, 1876-9, Liberal Leader for many years in P.E.I., Minister of Marine and Fisheries, Canada 1896-1901, and now a Justice of the Supreme Court of Canada, K.C.M.G. 1897; the Honourable Sir Charles Alphonse Pantaleon Pelletier, Minister of Agriculture, Dominion, 1877-8, Senator since 1877, Speaker of the Senate 1896-1900, C.M.G. 1878, K.C.M.G. 1897; the Honourable Sir James David Edgar, Speaker of the House of Commons 1896-9, K.C.M.G. 1898; Sir John George Bourinot, D.C.L., LL.D., Litt. D., Clerk of the House of Commons since 1880, C.M.G. 1890, K.C.M.G. 1898; Sir Malachy Bowes Daly, Lieutenant-Governor of Nova Scotia 1890-1900, K.C.M.G. 1900; Sir John Alexander Boyd, Chancellor of Ontario since 1881, Knight Bachelor 1897, K.C.M.G. 1901; His Honour Sir Louis Amable Jette, Puisne Judge, Superior Court, Quebec, 1878-1898, Lieutenant-Governor of Quebec 1898 to the present, K.C.M.G. 1901; Lt. Colonel (the Honourable) Sir Daniel Hunter McMillan, Provincial Treasurer, Manitoba, 1889-1900, Lieutenant-Governor Manitoba 1900 to present; Colonel the Honourable Sir Frederick William Borden, M.D., Minister of Militia and Defence, Canada, 1896 to present; the Honourable Sir William Mullock, Postmaster General of Canada 1896 to present, and Minister of Labour since the establishment of that office, K.C.M.G. 1902.

Although not decorated for services distinctly Canadian mention should also be made of Lieutenant-Colonel Sir Edouard Percy Cranwill Girouard, D.S.O., R.E., whose services in South Africa are too well known to require comment here, who was made a K.C.M.G. in 1900.

Prelate of the Order of St. Michael and St. George.

On 9th March, 1893, the Most Reverend Robert Machray, D.D., LL.D., Archbishop of Ruperts' Land and Primate of all Canada was created Prelate of the Most Distinguished Order of St. Michael and St. George.

Knights Bachelors.

It will be remarked that most of the gentlemen who have received the honour of knighthood are members of the Judiciary, usually

Chief Justices of the Courts in the various Provinces. This, the lowest, though more ancient, order of knighthood is selected as the one used in honouring Colonial Judges for the reason that it is the dignity which is usually conferred upon the Judges in England, who it may be surmised are knighted, not for the purpose of giving them any precedence (the judicial office being indeed the more exalted one) but rather for "the Honour of the Lady," for it will be borne in mind that in England a Superior Court Judge (who is also a knight) and his wife are announced at functions as "Mr. Justice and Lady So-and-so," and not as "Sir John and Lady So-and-so." The following is a list of knights of the United Kingdom, omitting those who have already received attention: Sir William Young, Chief Justice of the Supreme Court of Nova Scotia, 1860-1881, and Sir Robert Hodgson, Chief Justice of the Supreme Court and *ex-officio* Judge of the Vice-Admiralty Court of Prince Edward Island, 1853-74, and afterwards from 1874-9 Lieutenant-Governor of P. E. I., knighted in 1869; the Honourable Sir Edward Kenny, Receiver General of Canada 1867-69, President of the Privy Council 1869-70, Senator of Canada 1867-76, knighted 1870; Sir Hugh Allan, President of the C.P.R., knighted in 1871; Sir Matthew Baillie Begbie, Judge of the Colony of British Columbia 1858-70, Chief Justice of British Columbia 1870-1894, Local Judge of the Admiralty District of B.C. 1891-4, knighted 1875; Sir William Buell Richards, Chief Justice of the Common Pleas, Ontario, 1863-8, Chief Justice of the Queen's Bench, Ontario, 1868-75, Chief Justice of Canada 1875-9, knighted in 1875 when Chief Justice of Canada; the Honourable Sir Antoine Aime Dorion, Minister of Justice and Attorney General of Canada 1873-4, Chief Justice of Queen's Bench, Quebec, 1874-91, knighted in 1877; Sir William Johnston Ritchie, Chief Justice Supreme Court of New Brunswick 1865-75, Puisne Judge Supreme Court of Canada 1875-9, Chief Justice of Canada 1879-92, knighted in 1881; Sir Roderick William Cameron, Honourary Commissioner of Canada to Sydney Exhibition 1879, and to Melbourne Exhibition 1880, and who after his removal to New York in 1852 had established a direct line of steamships to Australia and New Zealand, knighted in 1883; Sir John William Dawson, LL.D., F.R.S., F.G.S., Principal and Vice-Chancellor McGill University 1855-92, President Royal Society of Canada 1882, President American Association for Advancement of Science 1882-3, President of British Association 1886, made C.M.G. 1881, knighted 1884; Sir William Collis Meredith, Chief Justice of the Superior Court, Quebec, 1866-84, knighted in 1886; Sir Andrew Stuart, Puisne Judge Superior Court, Quebec, 1860-85, Chief Justice 1885-9, knighted 1887; Sir Matthew Crooks Cameron, Judge Q. B.,

Ontario, 1878-1884, C. P. 1884-7, knighted 1887; Sir Adam Wilson, Judge Queen's Bench, Ontario, 1868-78, Chief Justice of the Common Pleas 1878-84, Chief Justice of the Queen's Bench, 1884-7, retired Nov. 7th, 1887, knighted 20th December, 1887; Sir Thomas Galt, Judge Common Pleas, Ontario, 1869-87, Chief Justice of the Common Pleas 1887-94, knighted 1888; Sir Daniel Wilson, LL.D., President University of Toronto, knighted 1888; Sir John Campbell Allen, Solicitor General New Brunswick 1856-7, Speaker Legislative Assembly 1863-5, Attorney General 1865, Puisne Judge Supreme Court of New Brunswick 1865-75, Chief Justice 1875-96, knighted in 1890; Sir Joseph Hickson, General Manager Grand Trunk Railway for some years, knighted 1890; Sir Francis Godschall Johnston, Puisne Judge Superior Court, Quebec, 1865-89, Chief Justice 1889-94, knighted 1890; Sir Robert Gillespie, knighted 1891; the Honourable Sir Alexandre Lacoste, Senator of Canada 1884-91, Speaker of the Senate April to September 1891, Chief Justice Queen's Bench, Quebec, 1891 to the present, Privy Councillor of Canada, October, 1892, knighted June, 1892; the Honourable Sir Frank Smith, Privy Councillor, Senator, member of Cabinet without portfolio in four Ministries, Minister of Public Works 1891-2, knighted 1894; Sir Louis Edelmar Napoleon Casault, Puisne Judge Superior Court, Quebec, 1870-94, Chief Justice 1894 to present, knighted in 1894 before appointment as Chief Justice; the Honourable Sir William Hales Hingston, M.D., sometime President of the Canadian Medical Association, of College of Physicians and Surgeons, of the Medico-Chiurgical Society and Vice-President of the British Association for the Advancement of Science, Mayor of Montreal 1876-7, Senator 1896 to the present, knighted 1895; Sir Henry Pering Pellew Crease, Puisne Judge Supreme Court British Columbia 1870-96, knighted January, 1896, two weeks before his retirement; Sir William Ralph Meredith, Chief Justice of the Common Pleas, Ontario, 1894 to the present, knighted 1896; Sir James Macpherson Le Moine, of Quebec, litterateur, knighted 1897; Sir Thomas Wardlaw Taylor, Judge of the Court of Queen's Bench, Manitoba, 1883-7, Chief Justice of Manitoba 1887-99, knighted 1897; Sir Melbourne McTaggart Tait, Puisne Judge Superior Court, Quebec, 1889 to present, appointed to perform the duties of Chief Justice in the district of Montreal, 1894, knighted 1897; Sir John Hawkins Hagarty, Judge Queen's Bench, Ontario, 1862-8, Chief Justice Common Pleas 1868-78, Chief Justice Queen's Bench 1878-84, Chief Justice of Ontario 1884-1897, knighted in 1897 after his retirement; Sir George William Burton, Justice of Appeal, Ontario, 1874-1897, Chief Justice of Ontario 1897-1900,

knighted in 1898; Sir William Christopher Macdonald, of Montreal, philanthropist, knighted in 1899; Sir Thomas George Shaughnessy, the present President and General Manager Canadian Pacific Railway, knighted in 1901; Sir Henri Elzéar Taschereau, puisne Judge Superior Court, Quebec, 1871-1878, puisne Judge Supreme Court of Canada 1878 to present; the Honourable Sir Robert Boak, member Legislative Council, Nova Scotia, 1872 to present, Provincial Treasurer, N. S., 1877-8, President Legislative Council, N. S., 1878 to present, knighted in 1902; Sir Gilbert Parker, M.P., knighted in 1902, though not coming within the scope of this article, may also be mentioned.

C.B.'s.

In addition to those already mentioned the following Companionship of the Bath (the third class of the Order) has been conferred: The Honourable William McDougall, C.B., 1867. It should be remarked, however, that the names of those Canadians who have entered the British Army or Navy, and have received this distinction by reason of their military services therein have been excluded. The following South African honours should nevertheless be added: Colonel Charles William Drury, Colonel William Dillon Otter, Colonel Thomas Dixon Byron Evans, Colonel Francois Louis Lessard, Colonel Samuel Benford Steele, M.V.O. (C.B. 1901).

C.M.G.'s.

A list of the Companions of the third class of the Order of St. Michael and St. George, with the same classes of exceptions, is as follows: Lt.-Colonel William Osborne Smith, Lt.-Colonel Archibald McEachern, Lt.-Colonel Brown Chamberlin, Lt.-Colonel John Fletcher, Lt.-Colonel (now Major-General) Samuel Peter Jarvis, Major James Farquharson Macleod, Lt.-Colonel Louis Adolphe Casault and Colonel John Hamilton Gray (1870), Lt.-Colonel Hewitt Bernard (1872), Colonel John Dyde, A. D. C., and Colonel John Sewell (1875), Alexander Murray (1877), Thomas Coltrin Keefer (1878), Alpheus Todd, LL. D., (1881), Alfred Patrick, the Honourable James Armstrong and Lieutenant-Colonel John Stoughton Dennis (1882), Lt.-Colonel Frederick Charles Denison (1885), Alfred Richard Cecil Selwyn, F. G.S., F.R.S., LL.D., (1886), Hector Fabre (1886), Joseph Grose Colmer (1888), William Henry Griffin (1890), George Mercer Dawson, D.Sc., LL.D., (1892), the Honourable James Robert Gowan, LL.D., and Collingwood Schreiber (1893), the Honourable Charles Eugene Boucher de Boucherville (1894), Alexander Boland Milne (1895), Louis Honore Frechette, John Mortimer Courtney,

John Lorn Macdougall and Lt.-Colonel William White (1897), George Robert Parkin, LL.D., (1898), Colonel Lawrence Buchan, Major (now Lt.-Colonel) Septimus Julius Augustus Denison, Major Robert Belcher, Major Arthur Murray Jarvis, Lt.-Colonel Robert Cartwright (1900), Joseph Pope, William Peterson, LL.D., Very Reverend George Monro Grant, M.A., LL.D., DD., Reverend Olivier Elzear Matthieu, Oliver Aitken Howland, Lt.-Colonel De La Cherois Thomas Irwin (1901), Lt.-Colonel Frederick White, Lt.-Colonel Percy Sherwood, Robert Harris, and Lt.-Colonel Joseph Alfred George Hudon (1902).

A number of gentlemen connected with the Dominion of Canada and its affairs, for example several of the Governors General, who have been given additional honours on their appointment, certain of the Commanders of the Forces in Canada, former heads of the Royal Military College at Kingston, Military Secretaries, etc., to Governors General, and others who have rendered service to the Dominion, who might perhaps with some additional interest have been mentioned, have been omitted, but the danger of omissions which has deterred the writer from entering exhaustively upon the field of Military and Naval honours has been present to his mind in this respect also.

M.V.O.'s.

Colonel Steele, who has already been mentioned, was created a Member of the Fourth Class of the Royal Victorian Order for services with Strathcona's Horse in South Africa.

FOREIGN TITLES, ORDERS AND DECORATIONS.

Various foreign titles, orders and decorations have at different times been conferred upon Canadians by His Holiness the Pope, the President of France and other Sovereigns, a complete list of which it is impossible to obtain. As to these it may be profitable to state that no British subject is at liberty to accept or wear any foreign medal (unless such medal is not intended to be worn) or the insignia of any foreign order or decoration without express license from the Crown and that such leave is never granted unless it is intended to reward active and distinguished service against an enemy, or actual employment outside His Majesty's dominions in the service of the foreign sovereign conferring the distinction or attendance upon a foreign sovereign to convey to him an Order from the British Monarch. The rules governing the practice in these cases were established in 1812, revised from time to time, the last revision bearing date June, 1898, now found in the Official Foreign Office List. They are strictly adhered to although they may not be capable of being legally en-

forced. It has been said that a "title" as distinguished from an order or decoration or perhaps as distinguished from the insignia of the order to which it belongs may be accepted without such license. It is difficult, however, to see how this contention can be reconciled with the following clause of the Regulations: "Every such warrant as aforesaid shall contain a clause providing that Her Majesty's license and permission does not authorize the assumption of any style, appellation, rank, precedence or privilege appertaining to a Knight Bachelor of Her Majesty's realms." In this connection the reference to the acceptance by Sir Wilfrid Laurier of the Order of the Legion of Honour of France, made by Sir Charles Tupper, who was compelled to decline a similar honour from the King of Belgium, will be recalled. While it is not intended to consider the old French titles conferred while Canada was still a colony of France (for that subject has received attention in another place) it may be well to refer to the one old French title which has received recognition by the British Sovereign—that of the Baron de Longueill. This title is attached to the old feudal Barony de Longueill, granted by Louis XIV to Charles Le Moyne for distinguished services. This patent of nobility is the more interesting as creating a territorial barony and also as conferring the title upon the first baron and his descendants, whether male or female. Had it not been for this general entail the title would long since have been extinct. The Treaty of Paris, 1763, made no change in the legal right to hold honours and each successive head of this family has borne the title by an assumption of right, which however did not receive official recognition in England till the year 1880 when Charles Colmore Grant, the descendant of Captain David Alexander Grant, who in 1781 married Marie Charles Joseph Le Moyne, Baroness de Longueill in her own right, was recognized as Baron de Longueill, but with no special precedence.

"OTHER CASES."

On more than one occasion certain Canadians have asked leave to decline the honours which the sovereign has been pleased to signify an intention of conferring upon them, in some instances from "conscientious scruples," in others for reasons purely personal, and sometimes probably from reasons of political expediency. The first and perhaps most notable case is that of Messrs. Cartier and Galt. It will be remembered that upon July 1st, 1867, the day appointed for bringing into political existence the Dominion of Canada, the Premier of Canada (John Alexander Macdonald) was created a Knight Commander of the Bath, and six other Ministers of State who had been instrumental in bringing about confederation, were made

Companions of the Bath, two of whom were Messrs. George Etienne Cartier and Alexander Tilloch Galt. These two gentlemen asked leave to decline the proffered honour on the ground that their prominent public services and recognized positions in Canada would not warrant them in accepting a lower degree of distinction than that which had been conferred upon Sir John Alexander Macdonald, lest their public usefulness should be thereby impaired. Mr. Todd from whose valuable work on Constitutional Government this information is taken states that "after some delay owing to the technical difficulty "that there was no precedent for refusing an honour which had actually been conferred upon an individual by the sovereign, a method "was adopted which met the views of these gentlemen without exposing their motives to possible misconstruction. On March 23, "1868, the Canadian House of Commons passed an address asking "for copies of the correspondence upon the subject. Upon receipt of "the same the papers were referred to a select committee. On May "15th the committee reported a recital of the facts above stated, and "expressed satisfaction that Her Majesty had since been pleased to "raise Mr. G. E. Cartier to the dignity of a baronet of the United "Kingdom. While this gracious act had removed any cause of misconstruction so far as Mr. Cartier was concerned, the committee observed that it placed Mr. Galt in a still more objectionable position. "They therefore recommended the presentation of an address to the "Queen, praying Her Majesty to cause such a remedy to be applied "as might remove the grievance justly felt by Mr. Galt. Whereupon "an address to the Queen was immediately adopted by the House and "transmitted through the Governor General. No reply to this address was communicated to the House, but in the ensuing year the "dignity of Knight of the Order of Saint Michael and Saint George "was conferred upon Mr. Galt in acknowledgment of his official services to the Crown." It is said that at least two Ontario judges who were subsequently created Knights (one however as it is stated without his own wishes on the subject being consulted) had years ago declined the honour, or at least taken steps to obviate the necessity of doing so, and that another very distinguished Judge has recently repeated his refusal. It is also stated that a former distinguished Minister of Justice and another eminent leader of the Bar as well as more than one Liberal Statesman have either asked leave to decline the honours proffered to them or have prevented the possibility of their being placed in the position of feeling obliged for their own reasons to do so; but it may fairly be remarked that the Jubilee year of 1897 and the Imperialism to which it has given a tremendous impetus have been responsible for a change of opinion in regard to what



theretofore had been dubbed in some quarters "tinpot titles," in as much as the prerogative of honour resting in the person of the sovereign is one of the strong connecting links which binds the colonies to that Empire which in the language of a Parisian newspaper, "surpasses Rome itself."

FRANK FORD.

PAN-HELLENISM.

IN the course of history there are to be found instances of the combination of a number of states into a union, which is something more than a formal alliance made for temporary purposes, and yet falls short of what we would call a full political association. Sometimes also, where the combination is never completely effected, we can note the existence of tendencies towards it, which have materially influenced the course of events. The connecting link in such cases is to be found in a community of sentiment, generally based on a community of race and origin, with the resulting common *ethos* and character; sometimes it is a common religious belief, occasionally mere local contiguity. One may find signs of such a combination in the at least nominal union of Western Europe under the Holy Roman Empire, based upon the continuation of an ancient political system which in the course of time lost many of its original characteristics; one may find them again in the combined efforts of the Crusaders working in the cause of a common Faith. In modern times good examples may be noted in the unification of Italy and Germany. The word "Pan-Slavism" is also of some import in this connection. In these more recent instances we can observe certain forces at work, especially that of a common national feeling demanding of a citizen something more than allegiance to the government under which he happens to be; and in some cases the force has continued until more concrete results ensue. It is true that such community of sentiment leading towards federation or amalgamation not infrequently means at the same time the political ascendancy of one of the parties concerned. "Pan-Germanism" has meant to a considerable extent the supremacy of Prussia; "Pan-Slavism" that of Russia. But this fact does not necessarily make the study of such movements the less interesting, since the union is made by consent rather than by force. Moreover it will be observed that the majority of the instances of this phenomenon are to be found where a "nation" is divided into a number of states, and yet there is at the same time a tendency towards union, i.e., towards making the nation and the state coextensive.

With these considerations it may be worth while to turn to the best known period of Greek History and to endeavor to ascertain how far there was ever a real Pan-Hellenic sentiment, and, if so, what were its effects. At first sight we may well doubt if "Pan-Hellenism" amounted to much, when we look at ancient Greece,—Hellas, taken in its widest sense, that is the Greek people wherever settled, from Panticapaeum to Cyrene, and Cyprus to Massilia. Of course the expression "The History of Greece" suggests a single country and a people more or less united with something like a single history. In fact we find that we are really studying the mutual, and often most confusing, relations of a vast number of petty states; there is none of that dramatic unity which marks the rise, growth and expansion of Rome. While on the one hand there seems to have been in the mind of every Hellene an underlying belief in the reality of the racial distinction between Greek and "Foreigner,"—and that, in spite of the presence of numerous "half-breeds" such as the Aetolians and Epirots,—while there was no mistaking a Greek community, wherever placed, on the shores of the Euxine or amid the sands of Africa, while they were gifted with a common and almost exclusive civilization, yet at the same time the practical effects of these peculiarities seem disappointingly few and small. In spite of their pride of race and the strength of their national ideals the fact remains that the Hellenes never attained to a systematic or lasting political union, even in Greece proper—never, at least, till the periods of the Macedonian and Roman supremacies, when in the view of most the best days of the nation were past and gone.⁽¹⁾

Causes of this lack of cohesion among their numerous communities are not far to seek. The geography of Greece Proper partially explains the continued separation of one part of the people from another, in a land where huge mountain barriers made communication between different districts no easy matter; and abroad, the vastness of the area dotted with scattered colonies planted along numerous shores must be taken into account. The Hellenic character, too, seems to have been instinctively averse to union on a large scale; just as within the state individuals and parties often made serious mischief, so, except on rare occasions, the average *Polis* could not look sufficiently far beyond its own borders or take a wider view of national interests. And this feature is further illustrated by the peculiar type of body politic developed by the Hellenes. The smallness of its area, the intensity of its life, the completeness of its system, and

(1) Moreover within the nation itself the 'racial' division between Ionian and Dorian was an important factor in their history at certain periods (e.g. in the Peloponnesian War, and at other times in Sicily).

even the deliberate limitation of its population, all serve to show what was the nature of the Greek political genius. From the point of view of Hellenism as a whole there was a centrifugal tendency at work, and larger political union was not seriously thought of.⁽²⁾

From the point of view of the average Hellene the *Polis* system had secured the "best life," as it was called; he was well satisfied with it, and failed to see that apart from its inherent weaknesses (e.g., the danger of *stasis* and the frequent struggle between oligarchy and democracy), it was bound to go down before the strength of a nation united and efficiently welded together by military discipline. Even under the most favorable circumstances it would have been difficult to devise any system whereby all these scattered cities, each clinging jealousy to its autonomy, might have been held together for any length of time. The Achaean League indeed succeeded in offering a solution of the problem, but it was only partially successful. And yet the Federal idea was not altogether strange to the Greeks even in early times and had its influence on the history of the nation. In several regions small federations existed. The Amphictyonic League of Anthela and Delphi had a long, though not very glorious, history; its influence on events was not happy, but on one occasion became important (355-346 B.C.), an importance which Philip of Macedon realized and quickly turned to his own advantage. The early Dorian Hexapolis, consisting of Argos, Phlius, Sicyon, Troezen, Epidaurus and Corinth, and the league of Ionian cities in Asia Minor meeting at the Pan-Ionium, may also be mentioned. Such unions were generally based upon a common worship at some centre, but no doubt a purely political expediency, if it had not counted for much in their actual foundation in a primitive age, yet in some cases at least was important for their continuation. So, later there was an extensive league of states acting with and under Sparta, in the fifth century, B.C., and earlier, which seems to have been something more than an offensive and defensive alliance continued with but occasional breaks, for many years. There were also to be found from time to time instances of political combination among a number of states which, though not formed on a Pan-Hellenic basis, may be worth consideration in this connection. Moreover, for centuries there existed between all Greek states certain points of union in which important influences were at work affecting the history of a race as a whole.

(2) It has often been noted that Aristotle, though once a resident at the Macedonian court and living at a time when the decay of the City-State might be observed, yet apparently regarded it as destined to survive and to continue to hold the same position in the politics of the world.

While the Greeks failed to attain political union or even a lasting international peace, yet in Religion, Literature and Art we may say that Pan-Hellenism was a realized fact. In these respects, despite local peculiarities of worship, dialect and style, they did live a common life—a life largely unknown to the *Barbaros*. The religious bond of union was important both in itself and in its effects. Their gods and theology were the same, the heroes for the most part, belonged to all alike, certainly the heroic traditions were to a large extent common property. The *Iliad* gives us a picture of a number of peoples united in a common cause; and a large proportion of the Athenian dramas deal with legends connected with Thessaly, Boeotia, the Argolid and other centres. The title of Zeus Hellenois, who is the object of a common worship, occurs, notably in the ninth Book of Herodotus, the writer who relates the famous story of a comparatively united Hellas. In 479, when Athens was taken for the second time, the Athenians in a message sent to Sparta, after referring to the offers made them by the Persians if they would consent to compromise themselves, continue:—"But we reverencing Hellenian Zeus and thinking it a terrible thing to betray Greece would not agree to the terms, but refused, although abandoned by the Greeks." (IX, 81.) The worship, too, of the Olympian Zeus was Pan-Hellenic in character. This is shewn more particularly by the celebrated meeting held every four years at Olympia, with all its numerous associations. During the celebration of the festival a truce was declared throughout the Greek world, to violate which was a serious offence against Greek religious feeling.⁽³⁾ The exclusively Hellenic character of the celebration may be noted. For example Herodotus refers to the claim put in by Alexander of Macedon (r. 498-454) to compete in the race, which claim was admitted by the "Hellenodicaï" on the ground that the Macedonian royal family was of genuine Hellenic origin. Again Herodotus may be quoted: "After the battle (of Plataea, 479), the Greeks brought together the treasures taken, and set apart one-tenth for the God at Delphi, from which was made and set up the golden tripod⁽⁴⁾ that stands on the three-headed bronze snake nearest the altar; they also set apart a portion for the Olympian God, from which they made and set up the bronze Zeus, twelve cubits high; and a portion for the God in the Isthmus, from which the bronze Poseidon, seven cubits high, was made; they then shared the rest." (IX, 80, 81.) The other references in this passage remind us of two other centres of national worship.

(3) In 420 the Lacedaemonians were fined for attacking Phycus and bringing armed men into Lepreum during the truce.

(4) This famous pedestal still exists, being now in Constantinople, having the names of the States inscribed.

The cult of Poseidon at the Isthmus had more than a merely local significance, and the Isthmian games resembled the Olympian in their Pan-Hellenic character; with which we may compare also the festival at Nemea. Again the shrine and oracle of Apollo, at Delphi, with the Pythian games, were famous as forming a centre of Hellenism. While it is true that they are in some respects almost cosmopolitan in character, the oracle being consulted by both Croesus and the Romans, yet they belonged primarily to Hellas; that a foreigner should consult the Pythia was a tribute to the religion of Greece. The passage above quoted is curious in that it shows that the trust of the nation in its oracle was not impaired by the very dubious patriotism displayed by the Delphic God when the Persians were in the land. In this connection certain passages taken from another author are of interest. In Plato's *Republic* the God in Delphi is to be the supreme authority in Greek religion. "For the Delphian Apollo there will remain the highest, most important and noblest acts of legislation," (i.e., the erection of temples, etc.) * * * * "These are subjects which we do not understand ourselves and about which in founding a state we shall, if we are wise, listen to no other advice or exposition except that of our ancient national expositor. For it is this God, expounding from his seat at the earth's centre, who is the national interpreter to all men on such subjects." And there are similar passages in the *Laws* expressing this view.

The national importance of these centres is again shown by the fact that record was kept at Olympia, Delphi and the Isthmus, of all treaties made between Greek states. Thus the treaty made in 422 between Athens and Sparta, after stating the oath to be sworn, concludes: "This oath shall be renewed by both parties every year, and they shall erect pillars at Olympia, Delphi and the Isthmus, at Athens and Lacedaemon."

One more instance out of a number of others may be mentioned. There was an ancient festival known as the "Proerosia," at which Athens offered sacrifice to Demeter on behalf of all Greece; at the time of its celebration all the Hellenic cities sent of their first fruits, in return for the benefits conferred by Athens upon the nation. (Isocr.: Paneg.: 31.) Of the details of the festival very little is known, but there is sufficient evidence of its existence from early times.

What has been said above will serve to illustrate the close connection then existing between religion and at least a certain side of politics. Thus the war of resistance to Persia was at once a patriotic and a holy one.⁽⁵⁾ Moreover, this common religious instinct had

(5) The less pleasing aspect of this connection is seen in the 'Sacred Wars' of 595 and 355 B.C.

considerable influence on Greek international law, and the conduct of war between conflicting states. Appeals to arbitration were not unknown. Periander acted as arbitrator in reconciling Athens and Mytilene; and immediately previous to the Peloponnesian war, an attempt was made, though unsuccessfully, to settle peaceably the quarrel between Corinth and Corcyra. Also the horrors of war were partially mitigated because of this feeling. Thus after every battle a truce was granted for the proper burial of the slain, one of the most binding of religious duties. Plato in the *Republic* (V, 469-70) discusses this question, and, no doubt, while suggesting improvements on existing practices, he also reflects the general opinion of Greece on this matter. He maintains that the enslavement of Greeks by Greeks is wrong, and condemns the devastation of Greek territory, the burning of houses, the stripping of the dead, and the offering of trophies taken from other Greeks in temples which are common to the race.

Other points of union may be more briefly referred to. The existence of a common pride of race is obvious throughout Greek history; it is illustrated by passages already quoted, and is often spoken of by the poets, orators, historians, and even philosophers. Euripides says, "'Tis right that Hellenes rule o'er Barbarians"; and Aristotle in commenting on the passage, explains "For 'slave' and 'barbarian' are naturally identical." On the side of thought, literature and art, Greek life and Greek genius is common. Great artists, teachers and writers come and go from one city to another. Herodotus is at home in Halicarnassus, Athens, Samos and Thurii. Aeschylus in his old age goes to Sicily; Euripides and Aristotle go to the Macedonian court, but it is to spread Greek influences there under the protection of a royal family that claims to be Greek; Gorgias from Leontini and Protagoras from Abdera come to Athens. Dionysius of Syracuse competes with his tragedies at Athens. While there were differences of dialect the language was one. Thus it is curious to note the introduction of the Dorian dialect into the choruses of the Athenian dramas, possibly a survival of the early Dorian influences on the development of the chorus under Arion of Corinth. Greek art too, for the most part, has very distinctive characteristics, e.g., in architecture there are varieties of style but the main features are the same in all.

Commercial enterprise, although sometimes a source of discord, as between Corinth and Athens, also formed a bond of union between various states. In early times there was the common struggle against the Phoenicians. Sometimes such enterprise was the direct cause of colonization. Naucratis in Egypt furnished an interesting

example; it was settled, under the patronage of King Amasis, by traders from different parts of the Greek world, more particularly from Asia Minor, and the representatives from most of the cities concerned joined in a common worship in the "*Temenos Hellenion*" granted them by the king. In some respects, however, Naucratis can hardly be regarded as a typical Greek colony, being chiefly a trading centre. Most of the colonies were more than this, being founded as separate and independent *Poleis* bound by a certain religious sentiment to their respective *Metropoleis*, but no longer politically connected. The Greek "*Apoikia*" in this respect differed both from the Roman "*Colonia*," and from the "Colony" as understood in its modern senses. In some cases the connection of origin and common sentiment disappeared notably in the case of Corinth and Corcyra; but in others there can be no doubt that it did do something to ensure at least continued friendly relations between two or more states, as in the case of Corinth and Potidaea.

Another unifying force, which never fully worked itself out but had some influence on the course of events, may be traced in the widespread instinctive acceptance of the "Hegemony" of one state. This "Hegemony of Hellas" meant more than the *de facto* supremacy of a single city such as Sparta as it appears to us looking back; it was a form of leadership acknowledged and to a certain degree expected by the Hellenes themselves. The leading state formed a point of union, being, in theory, *prima inter pares*. The best instance of this system may be seen in the acknowledged hegemony of Sparta before and during the Persian wars.

During these wars, too, the ideal of patriotic Hellenism was, comparatively speaking, realized. In the face of a common danger a common effort was made by a large number of states, and that in spite of the medizing of Thebes and Thessaly, the indifference of Argos, the hesitation of the Delphic God, and the absence of Gelo and the Sicilians. These latter, however, were fighting the same battle for Greece in the west against the Carthaginian invasion. Into the story of the war itself there is no need to enter; but it must be noted that the confederation did not last; the danger once removed the combination breaks up.

After the withdrawal of Sparta and those states closely attached to her, the Delian League was formed with a view to prosecuting the war on behalf of Greece against Persia. The cities of Asia Minor and the Islands of the Mediterranean were restored to freedom from the foreign yoke. Originally the League had a Pan-Hellenic character, in purpose, if not in organization, as is shown incidentally by the title of "*Hellenotamiae*" given to its financial officers. But

it soon became changed from its original nature, passing into the Athenian Empire. Cimon may be called a Pan-Hellenic leader. While maintaining the supremacy of Athens and her right to coerce seceding states, he still consistently carried out the original purpose of the federation, by actively prosecuting the war for Hellas against Persia, and at the same time doing his best to maintain friendly relations between Athens and Sparta with her allies. It is doubtful whether the same can be said of his more successful rival Pericles. He may have had a Pan-Hellenic ideal of Greece united under the leadership of Athens—and traces of it are to be found in his celebrated speech—but whatever may have been the blessings indirectly conferred on Greece by Athens during her supremacy, his whole policy tended to produce the opposite result. Under his leadership Athens violated Greek sentiment by coercing her subject allies to the extent of depriving them of their autonomy; and while the Aegean was protected from invasion, the war against Persia was abandoned. The alliance was an unsatisfactory one in itself, and though for a considerable time it kept the peace between a number of states that might otherwise have been quarreling, and also preserved the balance of power in Greece, yet it really divided the nation into two camps; on the one side was the Spartan confederacy, established on a fairly equitable footing, Dorian and anti-democratic; on the other was the Athenian Empire, Ionian and democratic in tone. The struggle broke out in 431 and the history of Thucydides tells the disastrous tale except for its last chapter. The result of the struggle was the downfall of Athens, and the weakening of all Greece, giving the present advantage to Persia and the future opportunity to Macedon. As is well known, the Spartans abused their power after 404 B. C., causing them to be execrated throughout Greece, and eventually making over the Greek cities of Asia Minor to the Persians by the Peace of Antalcidas (387 B. C.)⁽⁶⁾ The battle of Leuctra, (371) brought about the downfall of Sparta. At this date there seemed to be for a short time some hope of re-establishing unity in the nation. The second Delian confederacy of 377 proved successful for a time, but it was only of a partial character, and Athens showed her old faults again. The short Theban supremacy promised much, and it was an unhappy moment for all Hellas when Epaminondas fell (461). Of this this statesman one historian says, "By spreading "Greek manners and ways of life he enlarged the narrow boundaries of the land of the

(6) In extenuation of this last act it may be said that Agesilaus acting at the time as the leader of Greece had already begun inflicting serious blows upon the Persian power in Asia Minor and seemed likely to recover more territory, when he was frustrated by the action of Thebes and Athens who helped by Persian money, declared war against Sparta in 395.

Greeks"—"In his own person he represented the idea of a general Hellenic character which, unconditioned by local accidents, was freely raised aloft above the distinctions of states and tribes. Hitherto only statesmen had appeared who were great Athenians or great Spartans. In Epaminondas this local colouring is of quite inferior importance. He was a Hellene first and a Theban only in the second place. And thus he prepared the standpoint from which to be a Hellene was to be regarded as an intellectual privilege independent of the locality of birth—and this is the standpoint of Hellenism." (Curtius, *History of Greece*, vol. IV.) After his death we simply watch the collapse of Greece before Macedon. The speeches of Demosthenes and the essays of Isocrates show clearly enough the condition of affairs. Demosthenes was "leading the forlorn hope of the *Polis*." Isocrates, who perhaps deserves more credit than is usually given him, had some remedies to suggest for the existing evils. And even if his ideals were not fulfilled, yet some of his ideas were carried out by Philip and Alexander.

It is perhaps unfortunate that so many writers close the history of Greece with the years 338 or 323 B.C. These dates really mark the beginning of a new life for the Greek nation. While, except for brief moments, any political combination between Greek cities had been brought about hitherto only by the supremacy of one over others, yet in the third century B.C. the problem of political confederation was, within Greece proper, solved by the Achaeans.⁽⁷⁾ From 280 B.C. onwards for a century they provided a working system whereby each state in the Achaean League retained its autonomy, and yet for wider and national purposes became part of a single political body. While other states held aloof and the Macedonian power threatened it from the North, the League was still enabled to hold its own till eventually it disappeared before the Roman advance. It is true that the latter part of its history was less glorious, that discord appeared in its ranks, and its interests were hastily sacrificed to secure a momentary advantage. But, as one writer says, "It was one of the most brilliant attempts at national action on the part of the Greeks" * * * "Here was a better framework than the Greeks had ever known before for concerted action" * * * "It was the last word of Greek politics." (Woodrow-Wilson. *The State*.)

The history of Greek politics, indeed, has not been a very satisfactory one; but bearing in mind the words quoted above in reference to Epaminondas, we can see that Pan-Hellenism and Hellenism are not after all terms of any great political significance. It is not

(7) The Aetolian League achieved a similar but less complete success.

on its purely political site that Hellenism has been so important to history; the Greeks as a whole hardly solved in actual fact the problems they so keenly and luminously discussed. On the other hand, taking a comprehensive view one might almost say that the victory of Chaeronea in 338 B.C., gave Hellas its great opportunity; for centuries after that date, and over vast areas of population the Greek nation was carrying out its mission to the world, and no longer in the old exclusive spirit. A higher ideal of Pan-Hellenism became realized. In fact the words of Isocrates in praise of Athens (Paneg. 50) came to have a fuller meaning than he ever dreamed of.

"Our city has so far surpassed the rest of mankind in power of thought and speech that those who learn from her become teachers of others; and she has caused the name of Hellene to seem no longer one of race but of genius; so that those may be called Hellenes who have a part in our culture rather than those who share our descent."

G. OSWALD SMITH.

STEPHEN PHILLIPS' "HEROD."*

EXISTING fashions in literature make it inexpedient to refer to writings which have been in the public eye for more than a twelvemonth. It is regrettable that such should be the case, especially when the work, to which our attention is directed, has some permanent value. Mr. Phillips' play is a work of the imagination pure and simple, one that represents the kernel of wheat in a field of chaff, and while it is some time since the public, especially the playgoers, discussed its merits and defects, the thoughtful reader will be attracted by much that the play contains. Besides, "Herod" has been tried in the balance of public opinion and not found wanting. It has intrinsic worth: in the words of Ralph Waldo Emerson, it has just become a work with which the better class of readers must reckon.

Mr. Phillip erects a superstructure of beautiful imagery and true poetry on a very simple foundation or plot. The drama opens with the anointing of Aristobulus, Mariamne's brother, and the last male and descendant of the puissant Maccabees, as High Priest. The occasion is the feast of Tabernacles, and the boy is joyously received by the populace of Jerusalem. Herod's councillors have noted Aristobulus' favor with the people and are afraid that a popular revolt against the low-born Idumæan usurper will be headed by this boy.

*"Herod: A Tragedy." First produced at Her Majesty's Theatre, London, October 13, 1900. In the present paper, the references correspond to the second edition of the drama, London, 1901.

Herod's fears have been aroused by means of representations made by his mother and sister. He orders Sohemus to accompany Aristobulus to the bath as if he was to be protected. There, in conformity with the king's command, Aristobulus is slain.

A most passionate love scene follows. Herod, on his way to war, bids farewell to Queen Mariamne. Then the corpse of the murdered Aristobulus is brought on the stage. Mariamne mourns her loss and pays daily visits to his tomb. At first she believes that the boy's death is the result of an accident, but on one occasion, she learns the truth from Sohemus and her love of Herod is turned into most deadly hatred. When the king returns, a victorious soldier, and skilful diplomat, she accuses him as the author of Aristobulus' murder. Herod endeavors to parry her thrusts of accusation and to win her love again, but all in vain. He is warned that Mariamne is a grave danger to the state and his councillors distort her innocence into villainous treachery. Indeed the mother and sister of Herod add poison to his drink and then pretend to have discovered an evidence of Mariamne's perfidy in this.

Herod yields and orders Mariamne's death. But, in a most exquisite speech, he laments his unfortunate lot:—

"Where's now the boast, the glory, O where now?
 What was this triumph but in the telling of it
 To you! And what this victory but to pour it
 Into your ears! I had imagined all
 Meetings but this—this only I foresaw not;
 Here I disband my legions. Arise,
 And spill the wine of glory on the ground;
 I turn my face into the light. And yet
 Why am I bowed thus—I that am Herod? Come,
 I'll take you in my arms. I'll have your lips
 By force, and chain your body up to me;
 I am denied your soul, but I will slake
 This thirst of the flesh and drink your beauty deep!"†

Besides, the populace is turbulent, but Herod, by consummate use of flattery and diplomacy, calms them in their fears. In the final scene, Herod is shown repentant. He longs to undo what has been done, to recall that which can not be recalled. He thinks of Mariamne, she is the vision of his dreams, and the proud and crafty king cannot attend to his affairs of state. Herod calls Mariamne! At last, her lifeless form is taken to him, and with Herod in a deep, cataleptic trance of great artistic significance, the curtain descends.

†P. 66.

Around this simple, ingenious story, the web and woof of charming verse are woven. Herod is the character which the poet has delineated in bold strokes: every line lays bare the character of the king. But while he has succeeded with Herod, Mr. Phillips has not drawn other characters at all. They are more in the nature of rough sketches of character to be consummated at a later time. The play of passions, of conflicting emotions, is brought out very well; but, in its present form, "Herod" is a psychological incident rather than a drama. History is not presented to the reader in simple perspective: we see all by Herod's eyes. Mariamne, as a character, is soulless and barely existent. The remaining parts dwindle into insignificance. Then, too, the reader can only get Herod's conception of the characters: it is impossible for anyone to view this drama objectively. The continuous refrain of Herod's councillors—

"Still must we trample, crush, corrupt and kill—
is merely the foil for the vacillating course of the cruel king.

Mr. Phillips has considerable literary talent. His drama moves towards one great, central, inevitable catastrophe; thus the demands of a most exacting literary canon are fulfilled. The ideals are cast in an exalted sphere, but the tragedy is not an "acting play" and the only variety that is offered comes in the shape of beautiful, masterly poetry that will stand comparison with Marlowe's, Jonson's, or Beaumont and Fletcher's.*

However, Mr. Phillips' work is not a creation of great poetic or imaginative power. It was Heine who called attention to the fact that Goethe's characters, the most important as well as the least significant, were finished types. No one character claimed the poet's exclusive and indiscriminate attention to the consequent detriment of all the others. No part of Shakespeare's, of Homer's, of Goethe's writings but is sketched with a fullness that is commensurate with its importance. Heine, finally, has summed up the entire matter in these sentences:

. "In den Werken aller grossen Dichter giebt es eigentlich gar keine Neben-personen, jede Figur ist Hauptperson an ihrer Stelle. Solche Dichter gleichen den absoluten Fürsten, die den Menschen keinen selbständigen Wert beimessen, sondern ihnen selber nach eigenem Gutdünken ihre höchste Geltung zeurken-nen."[†]

"Herod" will live by the exquisite charm of its verse, by its literary value as a whole. The fact, that it has survived the period of

*The reader is referred to the German dramatist Hebbel's treatment of the same subject. His "Herodes und Mariamne" appeared in 1851.

†"Die Romantische Schule," (Cotta's *Bibl. d. Weltlitt*) vol. ix., p. 46 f.

ephemereal popularity successfully, augurs well for its continued hold on the reading public. In conclusion, Herod's speech, which he delivers when about to go to Marianne after his savage command concerning Aristobulus, deserves quotation *in extenso*.

"The queen? ah, no. Not yet—not on the instant.
Say I will come at dusking ere I go.
No, no; I cannot look on thee so soon.
I have struck him down, and fear has come on me;
Yet I ne'er feared before; not when I slew
The assembled Sanhedrin. Why do I tremble?
Not that I have contrived this murder, this
Most politic, most necessary act.
Then why this apprehension mystical,
This beaded forehead, and this quailing flesh?
Dimly I dread lest having struck this blow
Of my free-will, I by this very act
Have signed and pledged me to a second blow
Against my will. What if the powers permit
The doing of that deed which serves us now;
Then of that very deed do make a spur
To drive us to some act that we abhor?
The first step is with us; then all the road,
The long road is with Fate. O horrible!
If he being dead demand another death."*

ALBERT M. FRIEDENBERG.

*P. 34 f.

THIRTY YEARS IN THE HISTORY OF QUEEN'S, UNIVERSITY.

BY THE VICE-PRINCIPAL.

I WELL remember the strange admixture of feelings with which on a beautiful day in September, 1872, I first put my foot on the platform of the outer station of Kingston—then the only one—and was driven to the house of the late Professor Mackerras. Approaching the city from the east, I cannot say that I was greatly impressed by the character of the buildings, but as I came in sight of the Court House, with its bold and impressive lines, and its graceful Corinthian pillars, a wild hope sprung up in my mind that this might be the University building. Alas! that dream was soon dissipated as there immediately rose into view the structure in which, as I was informed, the sons of Queen's were taught mathematics, literature, science, philosophy and theology. The work of the College was, as I found, carried on in what is now the Medical building, as yet only of two storeys, with its little pepper-box on top intended as a belfry, and its general air of disdaining the meretricious advantage of architectural ornament and concentrating itself severely on what Aristotle defines as the object of a house—"to afford shelter from the weather." The building, indeed, as I afterwards learned, had been designed for the use of the School of Medicine established in 1854, the founders of which were careful and thrifty men who expressly stipulated that "no architectural ornament" should be employed in its construction—a command which by the too faithful builder was obeyed to the letter. My ideas of a University, on the other hand, had been determined partly by my familiarity with the venerable group of buildings in which the University of Glasgow had its earlier home, and partly by the magnificent pile spread over the summit of Gilmour Hill which is its present abode. The former, grimy as they were with the incrustations of some three or four centuries had yet a massive and imposing appearance; while the latter, with its long and continuous front of about 540 feet, its arched and groined gateways, and its lofty tower, was a fit symbol of the wealth and intelligence of the great manufacturing city upon which it looked down and of the fertile valley of the Clyde stretching as far as the eye could reach. With my mind's eye filled with this vision of a stately university it was hardly surprising that as I looked at the plain and ugly structure in which I was to begin my labours I felt a curious sinking of the heart. Scottish youth were not, even thirty years ago, quite innocent of American slang, and I am afraid I whispered sadly to myself: "One-horse college, evidently!" And when

I began to ask about the number of students, it was not very reassuring to learn that I should have one class of four, another of five, and a third of fourteen; the only consoling thing being that the number of students was obviously on the increase, there actually being an addition of nine in one year! A total of 50 students in Arts and Theology did seem rather a beggarly array; but a young man of twenty-five has a fund of hope on which he can draw in an emergency, and very soon the sense of littleness began to pass away. If there were few students, and but seven Professors, I soon discovered that the work done was of a solid and substantial kind, and that the graduates who left the University had no reason to regret the hours they had spent within its walls in fitting themselves for their life-work. The country was young, the University, after many struggles, seemed to have at length secured a firm footing, and the students had boundless faith in their Alma Mater. It would indeed have been hard to despair. The whole atmosphere of Queen's seemed to radiate with hope and enthusiasm, burning steadily in Principal Snodgrass, leaping into flame in Professor MacKerras, and forming a sort of unconscious medium in my remaining colleagues. Once entered upon my work, I was soon attracted by the freshness and latent talent of the students, as well as amused occasionally by their somewhat unconventional behaviour in the class-room. For thirty years fresh recruits have passed before me on their way to active life, but I have found no change in their character, except perhaps an intensified seriousness and enthusiasm for ideas in some, and a more eager effort in others to acquire the graces of society, due no doubt largely to the presence of so many lady students as fellow-workers in the pursuit of truth—and a degree.

Before saying a few words about the internal development of Queen's in the last thirty years, it may be well to recall very briefly her history in the previous thirty.* The early days of all universities are naturally days of anxiety and struggle, but it is no exaggeration to say that the fiery trials through which Queen's has passed, and from which she has emerged triumphant, would have killed an institution of less vitality. Whatever its future constitution may be, the graduates and friends of the University will never forget the debt of gratitude they owe to the Presbyterian Church of Canada. In the days when the whole government of Upper Canada was in the hands of the "Family Compact"; when there was no University in the Province except on paper; when half of the children received no education at all, and it was practically impossible for the son of a poor man to

*An admirable Historical Sketch of Queen's University by the Librarian, Miss Lois Saunders, will be found in Queen's University Journal for November 1st, 1901.

obtain even the training of a High School; it was in these circumstances that the Synod of "The Presbyterian Church in Canada in connection with the Church of Scotland" gave its hearty support to the establishment of a university at Kingston, and that the Colonial Committee of the Church of Scotland seconded its efforts by an annual grant, only withdrawn in 1883, after forty years of fostering care, when the University was strong enough to stand alone. It is true that in 1837 a charter had been granted by George IV by which the large endowment previously assigned by George III for the establishment of universities throughout the province was diverted to one university, to be called King's College; but nothing had been done to give effect to its provisions, while its constitution was of so exclusive a nature that both the Methodist and the Presbyterian churches had no resource but to establish a University of a more unsectarian and comprehensive character. How wise and liberal was the spirit which animated the founders of our University may be seen from two resolutions passed at a meeting held at Kingston in 1839. The first of these resolutions—which was moved if I remember aright, by Mr. John A. Macdonald, afterwards Sir John A. Macdonald—ran as follows: "That the formation of said College being a Christian and patriotic object, this meeting anticipates not only the support of members and adherents of the Presbyterian church, but all classes of the Christian community." And the second was: "That no religious test or qualification shall be required of or appointed for any persons admitted or matriculated as scholars within the said College, or of persons admitted to any degree in any Art or Faculty therein." No one who reads these resolutions can fail to be impressed by the remarkable liberality displayed by the founders of Queen's University, and by the Synod which endorsed their views at a time when the promoters of King's College virtually excluded from its walls all but members of the Episcopal church by exacting subscription of the Thirty-nine Articles from students as well as Professors. And when the Royal Charter establishing Queen's College passed the Great Seal on October 16th, 1841, while it enacted that the Board of Trustees and the Professors should declare their belief in the doctrines of the Westminster Confession of faith, the very words of the second resolution were employed, and it was expressly provided "that no religious test or qualification should be required of, or appointed for, any persons admitted or matriculated as scholars." Queen's was therefore, from the first, and has always remained, a free Christian University. There was, indeed, an incident which occurred some years later that seems to suggest a certain narrowness in the minds of the Board of Trustees. When in

1853 a bill was brought in to secularize King's College under the name of the University of Toronto, one objection made by the representatives of Queen's was that it afforded no guarantee of the religious beliefs of the Principal or Professors. This objection, however, was very much less sectarian than at first sight it appears to be. It was not claimed that the Professors of the Provincial University should be asked to sign either the Westminster Confession of Faith or the Thirty-nine Articles, but only that some guarantee should be given that the teaching staff was not hostile to the Christian religion.

Though Queen's College was established mainly for the higher education of young men who proposed to enter the Presbyterian Church, the curriculum was from the first based on that liberal conception of higher education with which its founders had been familiar in the land of their birth. In the very first session, or rather half-session, the ten students who in 1842 met in the modest frame building, which was the first home of the University, received instruction from Principal Liddell in Moral Philosophy as well as Divinity, while Professor Campbell lectured on Classics, Rhetoric and Belles Lettres. The following session brought an accession of strength, in the person of the Rev. James Williamson, M.A., afterwards known under the loving title of "the students' friend," who undertook the subjects of Mathematics and Natural Philosophy, besides conducting an Elementary class, rendered necessary by the wretched condition of secondary education in the Province. By the third session a fair and prosperous future seemed to lie before the College, the number of students having increased to thirty; but in July, 1844, an event occurred which was but the first of a series of crushing blows that seemed to threaten its very existence. The disruption of the Presbyterian Church of Scotland had as one of its after-effects the separation of a large number of the ministers, elders and people from the "Presbyterian Church in Canada in connection with the Church of Scotland," and their formation into the "Free Church." The prejudicial influence of this schism on Queen's was soon apparent. The number of students sank instantly from thirty to eleven, only one more than were registered in the very first session. This decrease, combined with a change in the policy of the Board of Trustees, who were at first willing to convert the University into a Theological College located in Toronto, provided that the charter of King's College was amended and the tests abolished, so disheartened and disappointed Principal Liddell that he resigned his office and returned to Scotland. That the Board in refusing to dismember the University, or to remove its location from Eastern Ontario, acted wisely, hardly any one would now be found to deny.

On Principal Liddell's withdrawal, it seemed as if the University were doomed to die of inanition, the number of matriculants in the session of 1846-47 being only *five*! But with the dogged determination of their ancestors, the authorities "put a stout heart to a stey brae" and refused to give in. Very soon things began to mend, so that in 1860 when Principal Leitch was appointed, with a staff of six Professors the number of students in Arts and Theology had increased to 55. Besides these there were in attendance 95 medical students, making a total of 150. From the first, indeed, the School of Medicine was a success, there being 47 students in attendance when it opened in 1854. The evil fate, however, which seemed to dog the footsteps of Queen's from the start again overtook her. Unfortunate dissensions arose among members of the teaching staff, so that when Rev. Dr. Snodgrass was appointed Principal in 1864, on the death of Dr. Leitch, the number of students in Arts and Theology had again decreased to 50, and in Medicine to 65—35 fewer than were in attendance in 1860. In 1865 the Medical Faculty was separated from the University, and under the name of the "Royal College of Physicians and Surgeons" carried on its work independently in a building leased for the purpose, being connected with the University only by the loose bond of affiliation, till in 1892 the original relation was restored. Under the wise guidance of Principal Snodgrass, the prospects of Queen's were again growing brighter, when, like a bolt from a clear sky, in 1868 the Government grant of \$5,000 was suddenly withdrawn, and to make matters worse, by the failure of the Commercial Bank about half of the remaining revenue was lost! A more desperate plight it would be hard to imagine, and it would have been no great matter for surprise if the authorities had at length thrown down their arms and admitted themselves vanquished. In twenty-five years the staff had indeed increased to 7, but the number of students in Arts and Theology was but 40, actually 24 fewer than had matriculated ten years before! The less resolute counselled surrender, and even the stoutest-hearted faltered for a moment; but from seeming defeat a new victory was won. The quiet resolution of Principal Snodgrass, combined with the contagious enthusiasm of Professor Mackerras—most delightful of colleagues!—surmounted all obstacles, and an Endowment Fund of \$100,000 was raised which was enough to prove the right of the University to exist, and to ensure that a solid education should be given to the youth who began to come in increasing numbers to its halls. When I first entered upon my duties in 1872, the improved aspect of affairs was just beginning to show itself, a result which was to some extent no doubt aided by the union of all the Presbyterian churches

in the Dominion, in 1874, the natural sequel to the Act of Confederation with its supplements by which the Provinces of Ontario, Quebec, Nova Scotia, New Brunswick, Manitoba, British Columbia and Prince Edward Island were combined in the Dominion of Canada.

This somewhat lengthy retrospect has brought me round to the point from which I started, and I may now go on to give some idea of the internal development of Queen's in the last thirty years. In 1872, then, Queen's had emerged from her trials, somewhat saddened no doubt, but filled with a steady and inextinguishable faith in her own future. The variety and solidity of the work she attempted to do will be at once evident from the seven chairs of Classics, History and English Literature, Mental and Moral Philosophy, Mathematics and Physics, Chemistry and Natural Science in Arts; Divinity, Hebrew and Old Testament Criticism in Theology. When to these subjects are added French and German, taught by the Professor of History and English Literature; Rhetoric and Political Economy, assigned to the Professor of Mental and Moral Philosophy, it will be seen that the graduates were provided with a tolerably complete introduction to the whole sphere of human science. It was impossible for them to complete the prescribed curriculum without receiving that peculiar elevation and breadth of view which at least insured a certain degree of sympathy for every branch of human knowledge. But of course the system had its own defects. The whole body of students met in a common hall for prayers at a quarter to nine in the morning, and from nine to one all the men of the same "year" sat on the same benches and listened to the same lectures. With a staff of five Professors in Arts and two in Theology there could be very little division of labour, no options, and practically no honour work in any department. There was but one Professor of Latin and Greek, who received no assistance of any kind in his work; the Professor of History was also Professor of English Literature, and threw in French and German as a sort of relish; the Professor of Chemistry lectured on Mineralogy, Botany and Zoology as well; the Professor of Mathematics was also Professor of Physics (or Natural Philosophy as it was then called after the Scotch model), and the Professor of Logic, Metaphysics and Ethics (such was his magniloquent title) was also expected to lecture on Political Economy and to fill up the gaps in his time by a few lectures on Rhetoric. Under such a system there could of course be no specialists in any department of science, and thus the graduates of Queen's were not likely to find their way into the High Schools as teachers of a particular class of subjects. It can hardly be denied, however, that the careful training they received and the wide outlook it afforded was admirably fitted to produce broad-minded and intelligent citizens.

From 1872 to 1877 the University moved along in a steady and solid way, the only change of any consequence that I remember being in the direction of rather more attention to honour work. The number of students in Arts and Theology had increased from 50 to 85, though in Medicine they had only risen from 35 to 45, making a total in the three faculties of 130. It was during this period, however, that the movement for the Union of the Presbyterian Churches was initiated and carried on to completion. Principal Snodgrass, with the strong sense and liberality of spirit by which he was distinguished, threw himself with all his energy into the discussion, and it was largely due to his tact and tenacity of purpose that Queen's was not shorn of her Theological faculty, and that she remained practically independent, bearing the same relation to the United Church as she had previously done to the Church of Scotland in Canada. Thus to all intents and purposes Queen's University remained free and undenominational, while at the same time she retained the religious character which distinguished her from the first.

With the consummation of the Union the work of Dr. Snodgrass was virtually done. The long and arduous fight had impaired his health, rendering him unfit for further efforts, and with his usual clearness of vision he saw the necessity of preparing the way for a successor. One other service he was able to perform, for which the friends of Queen's can never be too grateful. Having made up his mind that George Munro Grant was the only man qualified for the great task that yet remained to be done, he steadily insisted that the Principalship should be offered to him. I well remember the animated private discussions on the question, and the unanimity of the staff as to the fitness of his nominee. As usual many other names were mentioned, but Principal Snodgrass had his way, and the brilliant young minister of St. Matthew's Church, Halifax, who had already displayed his wide political vision in his advocacy of the Confederation of the Provinces and his remarkable skill as a debater in the Macdonnell Heresy case, was, in 1877, appointed Principal and Primarius Professor of Divinity of Queen's University. Never was an appointment more quickly justified. None who were present will ever forget the impression of abounding energy, insight, largeness of vision, and mastery over men that he produced, as he drew the bold outlines of his policy, and expressed his confidence in the loyal support of those who had called him to his new sphere of labour. The necessity of a proper Arts building and of an increase in the staff he saw at once, and made everybody else see; and after a year of ceaseless effort the second Endowment Fund of Queen's, amounting to \$140,000, was raised. The University being comfortably

housed, the more important problem of the specialization of studies was attacked, a new departure which the Principal saw to be absolutely necessary if Queen's was to keep pace with the growth of sister institutions. This of course involved a large addition to the teaching staff. The friends of Queen's at first looked on with wonder when it was suggested that at least six new chairs should be added! That anyone should dream of proposing to double the Professoriate would have sounded like the impracticable suggestions of a man who did not know the value of money, had it not come from the mouth of one who always knew what he wanted, and was determined to get it. What must the faint-hearted persons of those days now think, when the staff has not only doubled but *tripled*! It is true that to secure this end, first a five years' scheme for revenue had to be initiated, and a Jubilee Endowment Fund of a quarter of a million dollars secured; but these things have been done, with the result that the University has now a staff of 21 Professors in Arts, Science and Theology, 12 in Medicine, together with 7 assistant or acting Professors, 6 Lecturers, 3 Fellows, 14 Tutors and 11 Demonstrators, making a total of 74 teachers in all. That a single man should have devised and summoned into being this Armida Palace is almost inconceivable; that it has been done at all speaks volumes for the enthusiasm and the generosity of the Alumni and friends of Queen's.

My object, however, is mainly to draw attention to the educational aspect of this unceasing effort to place the University on a sound financial basis. The changes that have been made in the Professoriate have not so much introduced new subjects, as assigned special teachers to each. The chair of Classics, which in 1877-78 was assigned to one Professor, has split up into the separate chairs of Latin and Greek, with an Assistant Professor common to both, and three Tutors. The chair of History and English Literature, with the lectureship of French and German attached, has multiplied into the four chairs of History, English Literature, French and German, with an Assistant Professor of English Literature, and six tutors. There is now a chair of Mental as well as Moral Philosophy, with two Fellows, while Political Economy, which was formerly attached to the single chair of Mental and Moral Philosophy, is now taught by a separate Professor, with the aid of a tutor. Mathematics and Physics, which formed a single chair, are now represented by a Professor and Assistant Professor of Mathematics, a lecturer on Applied Mathematics and two tutors, together with a Professor and Associate Professor of Physics, and a Demonstrator. Originally there was a chair of Chemistry and Natural Science, now we have a Professor of Chemistry, a Professor of Mineralogy, a Professor of

Geology, a Lecturer on Chemistry, with five Demonstrators, a Professor of Botany, a Professor of Animal Biology, and three Demonstrators, making 14 teachers in all. A similar expansion has taken place in Medicine. In Theology the two chairs have increased to four, with a Fellow in Hebrew; the new chairs being those of Apologetics and New Testament Criticism, Church History and the History of Doctrines. These figures, however, are merely the external index of a transformation in the character of the teaching. With the greatly increased division of labour, it is now possible for both teacher and student to give a degree of attention to special branches of knowledge, which in early days was impossible. No doubt something is in this way apt to be lost in breadth of view, but it is more than compensated for by thoroughness and intensity. On the whole it is remarkable how little the comprehensive spirit of the Queen's University of an earlier day has been affected. Teachers and students alike, though their attention is mainly directed to one department of study, bring to it the same reverence and the same devotion to truth as of old, and where these are the characteristic features of an institution unity of spirit is assured. In the production of this type of a University, at once free and reverent, the close association of Arts, Medicine and Theology, which act and re-act on each other, has been one great determining element; and whatever the future constitution of Queen's may be, nothing would be more fatal than to disturb or weaken what has always been its characteristic feature.

As we look back over the history of Queen's, and contemplate its present condition, it strikes us at once that its future expansion must be in the direction mainly of Applied Science. The self-sacrifice of her friends, and the untiring efforts of the late Principal, have resulted in the possession of a fairly complete staff in Arts. By the establishment of a Mining School, and the promise of a School of Forestry, the Government have virtually pledged themselves to provide for Eastern Ontario that instruction in Civil, Mining and Electrical Engineering, and in Forestry, which is essential to the industrial prosperity of the Province. The friends of Queen's, by their generous contributions, the city of Kingston by its enlightened generosity in providing a new Arts Building, the students by contributing of their scanty means towards the construction of the "Grant Hall" as a memorial of their late beloved Principal, may fairly claim that they have deserved the most liberal treatment from the Province, and the least the Province can do is to see that its own nursing is not stunted for lack of proper nourishment.

JOHN WATSON.

THE CANADIAN MILITIA.

I.

NO country exhibits greater corporate indifference to her defence than does Canada. Few countries possess a defence force of so keen a soldierly spirit as the Canadian militia. Legally the force is a militia, subject to rather stringent liabilities. Practically, it is a voluntary force; its cohesive power certainly arises neither from self-interest nor from encouragement from the government. It is a typical instance of the strange individuality of the race.

Why do the militia serve Canada? Of pecuniary inducements there are none. The Ironsides of Cromwell, who had the success of their cause deeply at heart, were paid the rate of wages current among skilled workmen. At present the rate of wages which will attract men to soldiering seems to be about \$1.25 a day. That was approximately what was paid by Great Britain for the irregular corps raised in such numbers in South Africa, and it is also the average rate paid by the State to the National Guards of the United States when called out on service. The Canadian militia private receives 50 cents a day, a sum quite inadequate of itself to attract men. In some city regiments the men vote their \$6 a year back to the company or regiment to which they belong and thus though technically militiamen are, so far as personal reward goes, absolutely volunteers. Still less is the pay an inducement to the officers. A second lieutenant for his services in the annual training receives \$15.36, and a first lieutenant's pay is \$18.72. His uniform seldom costs an officer less than \$125, and he has to pay for his messing when his training takes place in camp. A captain's pay of his rank for his annual training is \$33.84. Certain allowances are added for instruction, care of the arms entrusted to him, and other duties and responsibilities cast upon the captain, and in some cases he is able to pocket a small sum in excess of his actual expenses. It is doubtful whether majors find their pay meet their expenses, and most commanding officers find their corps a source of expense.

Does the uniform attract the men? I am not inclined to regard this as a serious inducement. Quite apart from the question whether the private soldier looks well in his cheap, ready-made, ill-fitting uniform, supplied on a niggardly scale, I incline to the belief that the present uniform is distinctly unpopular in the force, which on the whole would welcome a change to a workmanlike colour and pattern. The majority of recently-raised corps have asked to be uniformed in khaki. The Highland regiments would doubtless insist on the retention of the kilt, but apart from this the militia, so

far as I am acquainted with it, is eager to abandon the scarlets, blues, and blacks which belong to a bygone period for a more sober garb.

We occasionally hear it asserted that social advantages are conferred by belonging to the militia. I cannot accept this as in any respect an adequate reason for the presence of thirty-six thousand militiamen in the country. Certainly, no social advantage is to be gained from joining as a private; often a social disadvantage is experienced. As for the two thousand odd officers, the majority of them belong to rural regiments and seldom wear their uniforms except at the annual camps. Of these a large number were unable to attend the levees which were held by H. R. H. the Duke of Cornwall and York because they were not in possession of full uniform. So far as the city corps are concerned, it is difficult to see what added social standing is conferred upon the average officer by his commission. The expense of keeping it up is usually large enough to ensure his being a man of fairly independent means. The only social advantage which I can recall as falling to a militia officer by virtue of his commission is an occasional official invitation to a commanding officer, and I decline to believe that officers remain for twenty years in the lower ranks purely in order to qualify at the end of that time for invitation to an occasional Government House dinner.

Why, then, do the members of so thankless a service persist in their obstinate adhesion to it? Primarily, I suppose, because they like it. I shall not deny that a very deep patriotism dwells in the bosom of the force. Its silence and readiness at the time of the Venezuela crisis—the absence of boasting and the absence of flinching—should be sufficient proof of its seriousness. But the surface motive for the queer, half-irrational and wholly patient devotion of the militiaman to the militia probably is that he is fond of soldiering. Drill is but a moderately interesting occupation, but it is the gateway to a field which makes soldiering a remarkably interesting hobby. The adventurous turn which is latent in most men; the pleasures of rifle-shooting; the comradeship of the regiment; all have their share in creating a spirit which in the last resort defies analysis.

It is plain that the force has no hold upon its members except their liking for it. The privates enlist nominally for three years but in practice drop out when they feel inclined. In the cities officers seldom exercise their right of summoning truants from the drill into the police court, and rural captains recruit their companies anew for every camp. An officer who is aggrieved by his superior is ready with his resignation, unless some hope of promotion tempts him to stay on; it is particularly difficult to retain subalterns, whose position is quite devoid of charms other than the zest of service. And yet a

singular degree of discipline is maintained. To the eye of the regular soldier the regiments appear slack. It is, however, to be recollected that the portion of the militia which drill at camp are soldiers on twelve days of the year and civilians on the other three hundred and fifty-three, that the men of the corps which are "trained at local headquarters" seldom are soldiers for a longer consecutive period than three hours, and that, out of uniform, officers and men in a large proportion of cases are not separated by any wide degree of social inequality. When these facts are remembered, the degree of care devoted to the observance of military etiquette, the steadiness attained on parade, the "regimental" manner in which work is carried on, become remarkable. Canadians seem to possess a natural aptitude for military discipline and to assume its bonds with eagerness. In South Africa the Canadian soldiery won the name, I believe, of being the best disciplined of all the colonial forces. I can from my personal observation vouch for the extraordinary rapidity with which the First Contingent became practically regular infantry, holding its place in one of the best brigades in the army. It not only showed the valour in the field which we expect of irregular troops, it exhibited the accuracy of outpost work, the punctual performance of the numerous "duties" which fall to the lot of the soldier in the field, the unwavering trustworthiness upon all occasions, and the accurate and steady manoeuvring under fire which are peculiarly the result of discipline and for which we look to regular troops. Less impressive at first sight, but equally significant, is the sight of a battalion of rural militia entering camp, at least half the men absolute recruits, and few of the comparatively trained men with as much as a month of total service to their credit, yet marching quietly along in column, the men looking to their front, and silent.

II.

Sir Edward Hutton started the fashion of styling the militia the national army. The phrase is a good one, but it represents what General Hutton wished the militia to become rather than what it is.

What is an army? The non-military reader probably thinks of the troops he has seen upon parade, and supposes an army to be a force composed of a certain number of cavalry, artillery and infantry. When he is told that the Canadian militia comprises a certain number of horse, a certain number of artillery, and a certain number of infantry he is likely to conclude that, inasmuch as it possesses troops of all three arms, it is therefore an army. But for a force to be an army two conditions are necessary: the three arms must be distributed in due proportion, and there must be a suitable number of

auxiliary troops to procure, transport and distribute the soldiers' food, to supply extra ammunition, to attend to the sick and wounded, to bridge rivers, improve roads, to ensure a good supply of water, to transmit messages, to get information, to repair damaged weapons, to pay the men, and in innumerable ways to ensure them the necessities without which life and health cannot be supported. Judged by these two grand conditions, is the Canadian militia an army?

The recent Royal Review at Toronto is a good illustration of the importance of the second of these two conditions. At that review a body of militia was assembled consisting of 24 battalions of infantry, 18 squadrons of cavalry and mounted rifles, 10 batteries of artillery, and one company of engineers. The greater number of onlookers doubtless thought they were looking at an army. But that body of troops could not have marched to Lake Simcoe, for they had no waggons in which to convey their tents or their provisions, many of them had no cooking utensils, and there were few officers and few or no non-commissioned officers or men present who understood how to manage a waggon train such as would be needed on such a march, how to collect the provisions that would be needed, and how to distribute them so that each corps would get its proper quantity. Those troops could not have fought a battle of ordinary length, for had they been supplied with all the ammunition the men and each battery could carry, there were no small arm ammunition carts to convey extra cartridges for the rifles and no waggons to form ammunition columns for the artillery and the reserve rifle ammunition. Had any of the guns broken down, means for repairing them would have been lacking. The engineers present were altogether too few to rebuild broken bridges, throw pontoon bridges over rivers, level different grades in the roads, arrange drinking places for the men and animals, work any railway lines which might be used, plan and execute field fortifications, lay and operate temporary telegraph lines, spy out the enemy's position by means of balloons, and execute the numerous other services that a considerable army in the field requires. It would have been difficult for the troops to work together in the field, for there were no mounted signallers and few dismounted ones, and very few signalling instruments such as heliographs and lamps. The ten thousand militiamen who stood on the Garrison Common were a distinctly helpless body of men, unable to march or fight. They were, therefore, from the military point of view, not an army; they were simply an accidental gathering of cavalry, infantry and artillerymen, without the auxiliary services by means of which they would be rendered effective. And the entire Canadian militia is simply an aggregation of battalions, squadrons and batteries, without the organization or the auxiliary departments essential to an army.

Let us examine the militia from the point of view of its distribution into the three arms. The active militia consists of 32 squadrons of cavalry and 12 squadrons of mounted rifles; 16 batteries of field artillery and 31 companies of garrison artillery; 4 companies of engineers; 631 companies of infantry; 4 companies of the Army Service corps; 8 bearer corps and 8 field hospitals; a medical staff and a veterinary staff. The permanent corps consist of two squadrons of cavalry and one of mounted rifles, two field batteries and two companies of garrison artillery, and five companies of infantry. It will be observed that there is no horse artillery at all.

The nominal strength of the active militia is about 38,000, made up of 2,800 cavalry and 600 mounted rifles, 3,800 artillery, 300 engineers, 30,000 infantry, 140 Army Service Corps, and 600 in medical services. The permanent force numbers 1,000, made up of 100 cavalry, 60 mounted rifles, 450 artillery and 400 infantry. These are the figures which are invariably quoted to any person inquiring as to our armed strength. As a matter of fact, they are entirely misleading. They indicate neither the number of trained men now actually available, nor the number of men who would be under arms in the event of a crisis which caused the nation to arm. As for the first point the rural regiments are not recruited until immediately before the annual training, so that during the period between the closing of one camp and the approach of another the large number of men whose time has expired are not replaced. Further, as a matter of fact, the three year term is rather a nominal affair in the case of all corps; in the case of most rural regiments the men enlist with the idea of serving for the prospective camp, and their officers seldom or ever compel a man to serve who is on their rolls but is reluctant to turn out.

As for the second point, it must be borne in mind that the establishment of the militia is far below what it would be in war time. I may explain for readers to whom this is a technical term, that each unit—company, battalion, squadron, regiment, battery—is of a prescribed strength; pay, food, uniform and necessities will not be issued to any greater number. In war time the establishment for each unit is simply the number judged best for efficiency in the field. In peace time the numbers authorized, for reasons of economy, are far smaller. To mobilize a force implies, among other things, to get hold of the extra men to bring up the establishments from peace to war size. It is a singularly characteristic fact that no war establishment is laid down for the Canadian militia, except in the case of a few engineer companies. As if jealous to preserve their reputation for perversity, the authorities in these cases have prescribed a war

and a peace establishment and have authorized certain engineer companies to continue an establishment conforming neither to the one nor the other standard. We may assume that if a call to arms were necessary, our authorities would adopt the war establishments of the British regular army. To illustrate the disparity between war establishments and the present militia establishments, a table may be presented :

UNIT.	MILITIA ESTABLISHMENT.	WAR ESTABLISHMENT.
Squadron of Cavalry.....	87 or 88.....	144
Company (Squadron) of Mounted Infantry (Rifles).....	54.....	140
Battery of Field Artillery.....	101.....	176
Company of Infantry.....	45.....	125

The reasonable thing seems to be to regard the force which would be furnished by existing units brought up to war establishment as the true force for which our present organization provides. For purposes of simplicity we may assume that the difference between cavalry and mounted rifles would soon disappear, and that all would be given the same squadron organization. A computation on these lines would show us to possess a force somewhat as follows :

Cavalry—47 Squadrons.....	7,500
Artillery—18 Field Batteries.....	3,150
Infantry—630 Companies.....	78,750
Total Combatants about.....	90,000
Field Guns.....	108

These figures need a little revision, for a considerable number of infantry battalions are of fewer than eight companies, and the missing companies would almost certainly be hastily raised. We can feel confident that the 86 battalions now carried in the militia list would turn out from 1,000 to 1,100 strong. We might allow also for the cavalry and artillery turning out rather overstrength, so that we can practically count upon our militia furnishing us at rather short notice with a field army composed as follows :

Cavalry.....	8,000
Artillery.....	3,500
Infantry	90,000
Total Combatants about.....	100,000
Field Guns	108

It is perfectly true that of these 100,000 men from 60,000 to 70,000 would be quite raw recruits. However, these recruits would fit into previously existing corps and would find officers and non-com-

missioned officers of some degree of training awaiting them. Further, they would be of a particularly fine class, the flower of our youth. Inasmuch as the men already in the ranks would be found to have on an average little more than twenty days of previous training to their credit, in a month the recruits would be little behind the older soldiers in actual time of training.

These observations apply to the infantry rather than to the cavalry and artillery. In both these services the horses need much training, and there is much for the men to learn. Consequently these arms cannot be increased with the rapidity with which fairly good infantry can be organized and trained.

Here, then, is the force which our present organization allows us to reckon upon. First of all is its distribution sound; that is, are the cavalry, artillery and infantry in proper proportions? I need scarcely remark upon the great importance of this point. To take a very recent instance, Lord Methuen in his dash towards Kimberly was greatly hindered by a bad distribution of the arms. In all of his four battles he suffered because of his lack of mounted troops, and the Magersfontein repulse was in a measure the result of this deficiency; while at Modder River he was for a time in a very difficult position because he was short of guns.

The best way in which to judge as to the wisdom of our own distribution is to look at the course pursued in armies abroad, alike when actually in the field and when organizing in peace-time for possible wars. A pertinent example may be found in the original British plan for the invasion and subjugation of the Boer Republics. Before the early successes of the enemy broke up this plan of campaign, it was intended that Sir Redvers Buller, leaving Sir George White to look after Natal, should march north through Cape Colony and the Orange Free State with a force composed of an army corps and a division of cavalry. Later the authorities were severely criticised for not providing a greater proportion of mounted troops; in other words, their distribution was defective. This force, it was intended, should consist, roughly, of the following troops:

Cavalry	7 Regiments	}	. . . . . 6,000
Mounted Infantry 2	"		
Artillery—19 Batteries.			3,150
Infantry—about 30 Battalions.			30,000
Total Combatants about.			40,000
Guns			114

It will be observed, (1), that this army of 40,000 regular soldiers, included nearly as many mounted troops as, and rather more guns, than are allotted in our 100,000 partially trained militia; and, (2), that this proportion proved defective. If we work out a sum in proportions, we will find that, according to the views of the British War Office in 1899—views which were incorrect in allowing too great a proportion of infantry and too low a proportion of the other arms—our 100,000 men should be distributed somewhat in the following proportions (I include our present distribution in the table):

COM.	THEORETICAL PROPORTION.	PRESENT PROPORTION.
Cavalry.....	16,000.....	8000
Artillery.....	9,000.....	3,500
Infantry.....	75,000.....	90,000
Guns.....	285.....	108

It may be worth while to give further illustrations. The army with which Lord Roberts relieved Kimberly and surrounded Cronje was roughly composed of:

Infantry.....	25,000
Mounted Troops.....	8,000
Artillery.....	3,000
Guns.....	98

Coming to our own continent, the force with which General Sherman started the campaign against General Joseph Johnston which resulted in the capture of Atlanta, was composed somewhat as follows:

Infantry.....	88,000
Cavalry.....	15,000
Artillery.....	4,500
Guns.....	254

General Joseph Johnston had to meet Sherman's army about 55,000 infantry and 16,000 cavalry. When General Lee prepared to enter on the invasion of Pennsylvania which ended at Gettysburg he had about 68,000 infantry and nearly 10,000 cavalry and artillery, and when he entered the wilderness campaign he had about 42,000 infantry and 10,000 cavalry.

Finally, the regular army of the United States in 1901, comprised about 72,000 combatants, in the following proportions:

Cavalry—15 Regiments.....	16,800
Artillery—Corps.....	12,000
Infantry—90 Battalions.....	43,700

The artillery corps is to be increased to nearly 19,000 officers and men.

By simply increasing its battalions to 1,000 men each this army would assume the following proportions :

Calvary	17,000
Artillery	19,000
Infantry.....	90,000

I think that I have made my point. Either our Canadians authorities have come to the conclusion that the defence of Canada would need a far lower proportion of mounted troops and guns than has proved the case with warfare in South Africa, in Europe, or upon this continent during the American Civil war, or else, what is infinitely more probable, they have never considered the subject at all, have come to no conclusions, and have allowed corps practically to organize themselves as individual fancy suggested.

I cannot, however, refrain from dwelling upon one aspect of this question, so important do I deem it. To support a body of veteran infantry of practically the same numbers as our Canadian militia infantry General Sherman had 254 guns. But he had under his command 350 guns; no less than 96 pieces were absorbed in detached services, the guarding of lines of communication, the protection of bases and other duties. Moreover, he had the vast stores of ordnance of the United States to draw upon. Our militia, who would take the field recruits, have 108 guns, and these are all the field guns in the country. If in the opening battle some Canadian artillery colonel were to meet with Colonel Long's misfortune and unlimber his brigade division within a thousand yards of a few hundred ambushed riflemen, one sixth of all our field guns would be gone. If our communications with Great Britain were in any way interrupted our position would be most painful.

The next consideration is, whether our 100,000 militia field force would be adequately provided with the auxiliary serices which I have mentioned. Without efficient administrative troops an army cannot take a day's march, and would starve in its standing camps. Here again we may look to South Africa where the administrative departments of the British army proved remarkably efficient. The flow of re-inforcements there was so constant that it is difficult to arrive at an exact computation of the proportions in which at any given moment these troops were allotted to the combatant services. In February, 1900, however, the British probably had about 120,000 combatants in the field, with over 450 guns. For this army there seems to have been serving at this time the following auxiliary and technical troops :

Royal Engineers	<div> <div>Field Companies</div> <div>Fortress Companies</div> <div>Railway Companies</div> <div>Steam Road Transport Companies</div> <div>Field Park</div> <div>Balloon Sections</div> </div>	19 Companies.
Royal Engineers—Telegraph Battalion.		2 Divisions
Royal Engineers—Bridging Battalion (Pontoons)		3 Troops
Royal Engineers—Field Troop (Mounted)		1 Troop
Army Service Corps.		39 Companies
Army Ordnance Corps.		9 Companies
Ammunition Columns.		
Ammunition Parks		
Siege Train.		
Medical Services	<div>Bearer Companies about</div> <div>Field Hospitals about</div>	<div>25</div> <div>40</div>
Field Intelligence Department		
Army Pay Department		
Army Veterinary Department		
Army Post Office Corps.		
Judge Advocate General's Department.		

All told, these services must have occupied from 10,000 to 15,000 men.

This may seem tedious, but I am anxious to drive home the extraordinary number and variety of services which are needed by an army in the field. General Buller's original force of an army corps and a cavalry division, if it had been equipped with technical and auxiliary services according to the standard of 1893, would have had over 7,600 of such troops for its 40,000 combatants.

Let us now turn to the technical and auxiliary troops provided for our 100,000 militia. They are as follows:

Engineers—4 Field Companies.	500
Army Service Corps—4 Companies.	300
Medical Services { 8 Bearer Companies.	500
{ 8 Field Hospitals	360
Veterinarians—a few.	
Signallers—a few regimental detachments.	
Intelligence Department—one or two officers.	

A nucleus of an Army Pay Department exists under civilian control. There is also a militia stores department, also under the civilian branch of the Militia Department.

The total of these troops is about 700; the units are so few that on mobilization these numbers would not be greatly increased. Additional numbers could be obtained only by the organization of new units.

The following services are unrepresented in the Canadian militia:

Engineers—Mounted Field Troops.
Pontoon Troops.
Fortress Companies.
Railway Companies.
Steam Road (or Motor) Transport Companies.
Telegraph Divisions.
Field Parks.
Sub-marine Miners.
Army Ordnance Corps.
Ammunition Columns.
Ammunition Parks.
A Remount Service.
Intelligence Department.
Army Signallers.
Army Post Office Corps.
Judge Advocate General's Department.

Very little comment is needed upon these facts. It is not necessary to be a soldier to imagine the enormous labor which would be involved in the sudden organization of these services. Were they all ready and efficiently manned, it would be hard work to expand the militia to 100,000 combatants and train the recruits in a reasonably short time. What confusion would we witness if we had these 100,000 recruits under arms and the central department agitated over the countless details of preliminary organization; hastily appointed government agents flying over the country, bidding against each other for horses; wild purchases of wagons for army service corps and ammunition column use in one part of the country, insufficient supplies in another; the railway companies driven wild by the contradictory demands of the military authorities; hurried flitting to England to procure guns, rifles, ammunition, heliographs, submarine mines, motor cars, traction engines, innumerable other necessities; blank uncertainty as to the enemy's strength and plans, and a feverish wasting of money on untrustworthy spies; soldiers falling ill in one camp with no one to attend them, and elaborate hospitals standing empty in another camp; postal authorities unable to find the shifting regiments so as to deliver the letters from home—the list can be prolonged indefinitely. Such would be the scenes were the militia mobilized tomorrow in earnest.

III.

It is useless to disguise the fact that there exists a positive reluctance to put the militia in a condition of efficiency. The objections to efficiency seem to fall into two groups: into apprehension lest our country be drawn into the vortex of militarism, to use the vivid phrase used by Sir Wilfrid Laurier, and into fear lest the United States

should take offence at our arming. I must confess to regard the alarm felt on the subject of militarism proper as wholly wasted; other conditions offer themselves in numbers against which we might far more justly direct our vigilance. Militarism, as I regard it, is that condition of government and of social structure in which there exists a class of professional soldiers possessing a large measure of political and social power as such, possessing interests distinct from and possibly in opposition to the interests of the civilian element in the population, and regarding the civilian element with a certain degree of contempt. Against militarism an efficient militia is in reality the greatest safeguard, for by such means the civilian element are armed and trained and so are independent of the professional soldier. The older and simpler form of militarism was that of the standing army, by means of which the liberties of the mass of the people were overborne. The militarism of Europe to-day is a peculiar and complex thing, which may be defined as the grafting upon the militia of a body of professional soldiers, in such a way as to confine the leadership to them. The typical European country obliges substantially the whole of its civilian population to undergo training in arms; that is the militia idea. But it provides a standing army of officers and non-commissioned officers who are professional soldiers and into their hands it commits the whole power. The militia is composed of privates alone, the standing army of officers and non-coms. alone. The interests of the officers and non-coms. are entirely distinct from those of the men who pass through their ranks and into the reserve. The professional combatant soldiers in the German army, for instance, number over 91,000. In Switzerland, on the other hand, we have a country unvexed by militarism, and yet admittedly well armed and well prepared. Switzerland is defended by a true militia, all the officers, all the non-coms. and all the men being civilians who devote a portion of their time to the acquisition of military training. Side by side in Europe thus subsist the extreme of militarism and popular government, protected by a true militia. And assuredly Canada stands in no danger of her militiamen turning their weapons and their training against their own liberties.

The other objection seems to me equally to rest upon a misapprehension. Organization very seldom excites international alarm. Prior to the Boer ultimatum of 1899 the War Office did a considerable amount of organization work which greatly facilitated the despatch of the troops to South Africa, and which yet escaped public attention and was not noticed by the exceedingly sensitive negotiators at Pretoria. It is the raising or mobilizing of troops that alarms

public opinion in adjoining nations, and that is precisely what is not needed in Canada. Our existing corps provide, with a little rearrangement, for quite as large an army as we need contemplate; if necessary the infantry portion of our troops could be doubled in a short time by organizing "second battalions" for our existing regiments. As a matter of fact we have within the past ten years raised several new battalions of infantry and all of our present mounted rifles without provoking any alarm on the part of our American neighbors. At the present moment we occasionally re-arm a battery with modern guns, they are steadily re-arming their National Guard with modern rifles, and nobody on either side of the line makes objection. And to me this last argument seems to overbear the whole objection—that our militia is kept in such a condition that it affords a considerable show and therefore is conceivably a source of provocation, and is at the same time helpless and useless. Were war to break out suddenly between the Empire and the United States, it is quite within the range of possibility that the Americans could overrun the greater part of Canada with their regular army alone, without calling upon their National Guard.

The first need which presents itself probably is that suggested by the fact that the existing corps if brought up to war establishment would provide about 100,000 men. Have we 100,000 rifles in the country? That is very doubtful. We imported 50,000 soon after the Venezuelan trouble and there has been no word of extensive purchases since then. Then, the 100,000 men who would be called to arms would need at least 300 field guns, and we certainly should have at least that number in the country. Obviously, we need large supplies of ammunition. The projected establishment of the Ross Rifle manufactory is in the right direction. Establishments where artillery could at least be repaired are a prime need. The existing ammunition factory should be enlarged and others like it established at points west of the wasp's waist in our country. Above all, our people should have arms and ammunition in the country.

As for the rest, it is difficult to say where to begin. One exceedingly necessary step would be the adoption of a definite policy as to the proportion of arms. I have shown at some length how our existing numbers would be expanded. It doubtless has not escaped the reader that the infantry would increase about three-fold while the mounted troops would hardly be doubled, so that the disparity between the infantry and the other arms, already dangerous, would be increased by the act of mobilization. If it is advisable to have 300 field guns in the country, it would also be advisable to increase our batteries from 18 to about 50, so as to have 5,000 of our militiaartil-

lerymen. Similarly, it would be advisable so to increase our squadrons as to allow of our having from 15,000 to 20,000 horse in the field in the event of mobilization. The figures I mention are purely tentative; it would be the duty of the administrative authority to consider the question of the defence of Canada from every standpoint and decide upon a definite proportion of the arms which it would regard as advisable.

If once the authorities decided upon a scheme of this sort, I am of opinion that they would find it easy to secure the aid of the officers and men of the force in carrying it through. The artillery is a favorite arm as it is, and it would need a very slight addition to the present meagre inducements, a slight advance upon the present scanty encouragement, to induce far more officers and non-coms. to qualify in this fascinating branch of the service. The recent addition to the militia of a number of squadrons of mounted rifles was largely due to the anxiety of individuals in the militia to establish such corps. I am confident, for example, that if asked and encouraged to do so, nearly every rural battalion could raise in connection with its work a mounted company. Again, peculiar facilities exist for the raising of a larger force of engineer militia, partly in the character of a portion of our population, partly in the fact that so large a proportion of our civil engineers have passed through the Royal Military College and are in reality trained and scientific soldiers. And once again, a considerable desire exists in the militia to see the technical and auxiliary troops established.

Next, we may urge that the auxiliary services which are so necessary in war be organized. I have dwelt much already on the work done by the engineers in war. We possess in the country a splendid railway and telegraph system, but no effort has been made to secure the aid of trained railway men and telegraphers for the militia. Yet what admirable railway engineers and telegraph engineers they would make. In England prominent railway officials are given commissions in the volunteers and form what is styled a railway staff corps. The civil engineers of the country form a body of men particularly available. The Army Medical Service, in which a good beginning has been made, offers a particularly promising field for militia organization. A general desire exists throughout the militia to see the new Army Service Corps given an effective organization. This is a service which might be greatly benefitted by co-operation on the part of our railway men, for who would be better at the gathering and transportation of supplies than the men who have specialized in the freight departments on the railways? Similarly, in our farmers we have men owning draught animals and vehicles and

skilled in their use. A moderate degree of organization, on the part of a very few officers, who would cost the country very little, would provide the country with a systemized machinery for the collection, transportation and distribution of necessities, which in the event of need would prevent the chaos which has so often attended the hasty arming of an unprepared people. I forbear to go right through the list of services which I have already enumerated as lacking. All that is needed to establish each and every one of these is the appointment of a few organizing officers, the seeking out of men whose avocations give them the desired qualities, the enlistment of their sympathies, the fixing of their rank and status, and the establishment of an understanding that they would serve their country when called upon.

Were such an organization carried out, and a mobilization of the militia to become necessary, I would expect, for example, the central remount department to decide how many horses would be needed, to know exactly where horses were to be procured, and to have in the best veterinary surgeons and horse dealers in the country purchasing agents already appointed and ready to act. A telegram stating the number of horses needed and the average price to be paid would be sent to each man and the supply would be forthcoming. Simultaneously in every important railway town some highly placed railway official would put on a uniform, become known as the Railway Staff Officer of the town, and continue to do the duties of his daily life, forwarding troops and supplies, with the advantage of having his relative rank settled and his relation to the various officers who would have business with him on a satisfactory footing. Simultaneously produce merchants, buyers and contractors all over the country would become non-coms., lieutenants, captains, majors and colonels of the Army Service Corps and would be purchasing supplies for soldiers in camps, instead of for civilians in towns, while railway men and farmers and carters, as part of the same Army Service Corps, would be transporting the same supplies by rail and road. Practical mechanics would be ready to repair broken-down guns and waggons as part of their duty as militia soldiers; post-office clerks would be handling the soldiers' mail; surveyors would be on the threatened frontiers, planning the fortifications the generals would desire. Intelligence officers would attend upon the generals, ready at a word to inform them as to the nature of the roads, volume and condition of the water supply, size and military value of the hills, numbers and dimensions of the bridges, nature and capacity of the railways of any area in which operations might become necessary. In a word, all over the country the arming and drilling would be going on under the easiest possible conditions because the enormous task of supply-

ing and maintaining the combatant force called into existence would be in the hands of the men in the community best fitted for the task because their ordinary avocations fit them for such duties.

Such a measure of organization involves no vast expenditure. It would be necessary to pay a few organizing officers. For the rest, officers and non-coms., rather than privates, would as a rule be desirable, and whereas in the case of the combatant troops prolonged annual trainings are necessary, in the case of many of these auxiliary corps the object would be to have the men enrolled and their rank and relations to other troops defined, rather than to summon them for expensive periodical trainings. Take for instance, the Railway Engineers. Once the officers appointed to such a corps had learned the special duties which would devolve upon them in the event of mobilization, their need for special training would disappear, and unless they were called upon to transport troops to and from the annual camps they would not be called upon by the authorities.

And finally, it may be demanded that some of our national ingenuity and inventiveness appear in our military organization. Our militia authorities so far, with the exception of the encouragement given to the Ross rifle, have shown an amazing reluctance to sanction anything but the most hide-bound routine. We have no horse artillery, necessary as that branch of the artillery arm is. We have no cyclists, though cycles are ridden by scores of thousands, though large bodies of volunteer cyclists manoeuvre with success in Britain, and though observers of the South African war such as "Linesman" and Count Sternberg preach that one of the lessons of that war is mobility even if it be obtained by cycles. We have no marine miners, though well-informed and ingenious men are numerous in the ports that need defence. We have next to no signallers, although the subject is so interesting that in many corps men make it a hobby and do the best they can with flags when denied heliographs. We do not recognize the motor-car, though the British War Office is organizing a corps of motor-car volunteers. The catalogue of possible lines of activity may be prolonged, but the answer is invariably the same. A change of attitude we may fairly demand. As our militia exists by reason of and thanks to the zeal and spirit of the men who compose it, we may ask that the men who show that zeal be encouraged to exercise it in the fields to which their natural bent directs them. A policy of official encouragement would produce singularly rich results in the by-paths of soldiering.

With that I may conclude. A host of topics must remain untouched. I have said nothing, for instance, about training. I hold that even so important a subject as training comes under the head of

details, and that the questions which I have discussed here embrace the broader general aspects of the case. To some extent details must be left to experts; but upon these broad principles we can appeal to the people at large. The government of the country possesses a mandate from the people to keep up a militia of moderate size. Should not the people add to that mandate the further desire that the force should be coherent, knit together by the necessary services, organized upon a sensible plan? If the people who pay for the force express the desire, these things will be done; they are neither difficult, expensive nor unreasonable. The people who pay for the force should require their money's worth. At present they do not. A couple of million dollars are spent a year; the members of the force are not paid the current rate of wages, and the country does not get the security which it should get. It is not a great increase of expenditure which I suggest, but a business-like spending of the sums that are available. In short, I suggest that the people of Canada put their militia on a business footing. It is not on such a footing now.

RELATION OF OUR EDUCATIONAL SYSTEM TO PRACTICAL LIFE.

THE question of modern education has very many aspects. It may perhaps be of some interest to consider the matter from the point of view of the business man. What, then, from his standpoint, is desired from our educational system?

Taking the boys from our primary schools what do we want and what do we find? In the first place we want boys who will try to do the work they have to do as well as they can do it. This is the same whether the boy intends to become a mechanic or to enter a mercantile house, but, as far as one is able to see, Canadian boys when leaving school, are more concerned about their hours and the pay they are to get than with their work, they are too self conscious.

Take the usual course for boys entering a wholesale house employing from twenty-five to one hundred hands. Boys are usually started in the office and graduated to the different departments as opportunity arises. The primary qualifications are, that the boy must be able to write neatly, to set figures in straight lines and one under another, to spell correctly, and to be able to do a little figuring. That does not appear to be a severe test; but my experience, which has been chiefly with boys of about sixteen years of age, is that nine boys out of ten write in a most slovenly manner, and that less than sixty per cent. of them spell correctly words in every day use. They

know a good deal about military drill, can talk temperance and argue on hygiene, though they would probably spell "health" without an "a"; they can tell all about the North Pole, though they are not sure whether Ottawa is in Ontario or Quebec. If they are given an index to write up it will probably look as though a centipede had got into the ink-pot and crawled across the book. In a word their education is crude and too thinly spread. The boys are handicapped and so are the business houses. No little energy has to be devoted to teaching the boys the very things they should be taught at school; energy that can ill be spared in a busy office. Among other consequences, in many offices girls are preferred for minor office work because of their greater neatness and carefulness. One may not care about employing girls but one finds in them an ambition to do their work well, which is just the spirit we should like to see in boys.

Any boy who will take the trouble to do his work well cannot but get on, employers are looking for them and such a boy is always advanced. The old plan in offices was to take a boy on the understanding that for three years he would work for a nominal wage in return for the business education he would get; now boys are taken for what they are worth and are advanced just as soon as they prove themselves capable, and are paid what they can make themselves worth, and the more they can make themselves worth the better employers are satisfied. This is a young man's age and if our school training will enable our boys to do well whatever they put their hands to, it will be invaluable to the boys and to our business interests.

Is it not possible that the wide employment of the female teacher is having an effect on the character of our boys? The boys from the primary schools seem to have less aggressiveness, their receptive faculties appear to be cultivated at a loss to their deductive faculty and executive power, and there is an increased sensitiveness and self consciousness. It is just possible that the sterner discipline of male teachers would do more to develop the masculine qualities, than the sensitive and nervous restraint exercised by a woman. My experience has been that English boys are better grounded than Canadian boys, yet once our Canadian boys get a grip on their work and their ambition is whetted, they seem to grow more alert than English boys and to have greater possibilities. Their chief defect is the attempting of quantity rather than quality and if they were taught to be more careful there would doubtless be much improvement. In taking notes and in writing out arithmetical examples, neatness and order should be insisted on and the habit of thoroughness fixed.

With boys from the secondary schools the results are better;

but the defects of the public schools have their effect on the secondary course. Haste and diffusiveness seem still to mar our system. The lad from the High School should at least write well, spell correctly, and be able to figure accurately. Our High Schools appear to give their students an excellent drilling in arithmetic. They figure rapidly and fairly correctly, though perhaps too great attention is paid to rapidity. For instance, on an examination paper say of ten examples, if one student finishes all and has eight correct, he counts more than one who finishes seven and has all correct, though it seems doubtful if the former is the better work. Sixty per cent. may do on an examination, but one hundred per cent. is required in the office. The High School boy is still struggling with a great many subjects and scarcely has time to do what is required of him as it should be done.

In regard to higher education, from a business man's point of view, one may say a few words on the Commercial Courses being instituted in a number of universities on this continent.

The first object seems to be to attract the prospective business man to the universities. The sons of well-to-do business men will often attend because of the associations; but I find that many business men hesitate to send their boys to a university, because though they gain knowledge they lose in the power to act. They are also apt as graduates to feel themselves above that study of detail which is the foundation of a business man's training, and on this account fail to obtain a thorough knowledge of minor matters that cannot very well be acquired later in life.

The measure of a successful business man is not merely the amount of money he can make. The desire of most men in business is to succeed—to carry on successfully the enterprise which they have undertaken. If a university training will increase a man's ability to deal with men and affairs it will mean a gain to himself that will soon be recognized, and if at the same time it will give him a taste for culture, it will mean a gain to society that will be widely felt, and will doubtless mean a great gain to the universities themselves, which are now too widely separated from our commercial interests. While our academic institutions should not be subordinated to our commercial interests, yet we can scarcely fail to see that where they work together, as in Germany, it means a great gain to each. For instance, though the production of aniline dyes from coal tar was discovered in England, Germany has developed the industry, by the aid of her professors of Chemistry, to such an extent that ninety per cent. of the dyes used in some of the English dyeing industries are now of foreign manufacture.

But as to University education for the ordinary business man who is to be attracted by a commercial course, and who has to make his own way in the world, what will he gain and what will he lose? In the first place he will lose some time—from two to four years—and will enter an office possibly feeling a little above the work that he will at first be expected to do. But if he be better qualified to do good work he will soon overcome the handicap under which he starts. This should not be lost sight of in the acquiring of knowledge that will, later on, enable him to more intelligently grapple with difficulties he will meet and problems he must solve. Mathematics of course is always of importance. Special attention is given in some colleges to the science of statistics, and as business enterprises are becoming merged in large organizations, young men who can accurately gather statistics and concentrate them intelligently and lucidly, will readily find employment. The demand for such men is every day greater, as principals have to keep track of large organizations chiefly by figures showing the returns of various departments.

A young man working his way, would also find it a help to acquire a knowledge of shorthand, while pursuing his university course, as it will give him a chance to enter an office at a little higher level and at somewhat better pay.

In an adequate commercial curriculum considerable attention should be given to History and Natural Science; by history I mean the study of events, not merely of the names of kings and queens with their dates—because a knowledge of the underlying causes of events broadens a man's horizon and strengthens his judgment.

The attention which Queen's University is devoting to the departments of Mines, Agriculture and Forestry, will surely prove of great value in the development of the country. The shockingly wasteful methods by which our forests are being depleted entail a loss that would many times pay the cost of the education needed to check it. Positions as scientific foresters already await the right men—in fact the time seems to be coming when educated and scientific superintendents must take the place of the old rule-of-thumb men in all branches of manufacturing.

There is one danger that I think should be guarded against by University men entering business life. At a Queen's Alumni dinner in Toronto last winter one of our ablest journalists said that so long as our colleges turned out "wooden men," journalists must hesitate to look to them for their raw material; and the president of one of our railways recently wrote in reply to an inquiry, that although two great railway companies had their headquarters in a city in which

were educational institutions lavishly endowed with the finest equipment, they were obliged to look outside these institutions for live young men, because of the unpractical attitude of the students towards their work. It is easy enough to find theoretical men only and also those who are practical only. But if our universities can turn out men who combine these qualities they will accomplish work of the highest value. The trouble seems to be that students have knowledge instilled into them instead of being taught to observe, to think and to act. Students of Political Economy appear to be more alert than most others, perhaps because they are dealing with changing events and practical affairs must be observed and compared. Men's observation and thought can doubtless be trained, though it may be doubted whether a man can be taught in a college to act.

College men who contemplate entering active business life, whether it be financial, commercial or industrial should ever beware of the danger of growing to think themselves above giving attention to the smallest details. If they can gain knowledge without losing the capacity for details they must advance more rapidly than their less educated competitors.

If our boys can be taught the value of doing well whatever is immediately before them, and if our students can be taught to observe and think for themselves, in a word, to be resourceful, I think our educational system will have taken a long stride towards that pinnacle on which some of our popular orators have already set it.

F. J. CAMPBELL.

THE FIRST AGRICULTURAL SOCIETIES.

AS the summer passes away and the fall begins to turn the greens to brown and yellow and red a change comes over the mass of humanity and the question passes from one to another, "What about the crops?" The Agricultural Departments begin to gather in their reports by the thousands; the newspapers send abroad their keen, observant young men; the millers, the dealers and the speculators set their private wires humming with notes of enquiry, and the talk of wheat and corn and clover, of butter and cheese and beef, becomes universal. If the crops are good, a smile of satisfaction gradually broadens out across the great face of humanity and the farmers feel that then if at no other time their importance in the Commonwealth is appreciated. The Fall fair, the Agricultural exhibition, the County show, as it is variously called, now comes as a natural sequence to a bountiful harvest. •

Whence came the farmers' fair? We turn back to our boyhood days and it was there, perhaps the greatest event of the year in our somewhat limited field of excitement. We ask our fathers and they tell us that it was the great rural event of their boyhood days. Was it always in existence? If we turn to our school histories we shall not find it mentioned there—in fact we shall find little there that tells us of the development of our greatest of industries. We may have to look for some records of its early days in out-of-the-way places. We find some old works dealing with the great fairs of Europe and we think we can detect in them some conditions and events that may have suggested some of the amusements of our more modern fairs. And then we turn to some of the old philosophical societies of Europe and in them we think we can detect traces of the educational features of our agricultural societies. It is hard to run great movements back to their origins, but a combination of the prehistoric religious festival or fair and the comprehensive philosophical society appear to be in some degree a satisfactory answer to the question as to the source or origin of our more modern agricultural society.

The visitor in London will find much to interest him in the stories still clinging to old Smithfield (smooth field) and St. Bartholomew's, and perhaps in the working out of those stories he may find some facts that will help him to an understanding of the peculiar ways of our modern fairs.

One ardent historian has traced these European fairs back to the Green Isle. In the reign of Queen Anne the holding of pilgrimages to holy wells was forbidden and a fine of twenty pounds was inflicted upon any one who dared to build a booth or sell ale or other com-

modities at such pilgrimages. Mitchell, in his "History of Ireland," adds this comment:

"Thus in Ireland were made penal and suppressed those patron fairs which indeed had been the origin of the most ancient and celebrated fairs of Europe as those of Lyons, Frankfort, Leipzig and many others."

The first purpose of the agricultural societies of a century ago was to hold meetings for instruction, the awarding of prizes in competition soon followed, and the revival of the old time amusement features of the early fairs seems now to have brought about a condition that needs careful supervision and wise direction into better lines.

Space does not permit a reference here to the early history of the great agricultural societies of England, Scotland and Ireland, whose records have been carefully preserved. The records of the United States are not so complete, but from various sources I have made a list of the dates of formation of the first agricultural societies there as follows: S. Carolina, 1785; Pennsylvania, 1785; Maine, 1787; New York, 1791; Massachusetts, 1792; Connecticut, 1794.

My purpose now, and it is the main object of this paper, is to show that in Canada the governing and directing powers were not behind those of the neighboring States, and I shall refer to the work done in Nova Scotia, Quebec and Upper Canada.

NOVA SCOTIA.

British rule began in 1713, but until the founding of Halifax in 1749 the English speaking population was sparse. In 1762 it amounted to only 8104. We have some faint traces of fairs in these early days. Thus *The Nova Scotian Gazette* of 1773 contains an advertisement of races to be held at "The Windsor Fair" on the 15th and 16th of June, one plate of twenty pounds and one of ten pounds being offered for "native-bred horses." Some years ago an editorial appeared in *The Mail*, Toronto, in which reference was made to an old handbill advertising the inauguration of this fair in 1765. I have been unable to trace the subject beyond this editorial, but with the belief that it must have been founded on substantial material I reproduce the following:

"Whereas it is thought that the establishing of a fair at Windsor will be of great utility to the Province of Nova Scotia a number of the gentlemen of Halifax, being desirous of promoting every measure that can conduce to the public good, have entered into a subscription for premiums and rewards and will cause the following to be given on Tuesday, the 21st of May, 1765—the first day of the fair." Then followed the prizes for cattle, horses, sheep, butter and cheese A laced hat, a pair of spurs, and a pair of shoes with buckles

were the three prizes offered for the wrestlers. It would appear therefore that Windsor, Hants County, Nova Scotia, lays claim to being the pioneer holder of an agricultural exhibition in Canada if not in all North America.

Whatever may be the historic doubts as to this date, 1765, there certainly is none as to 1789, for in November of that year a provincial association was organized with the following officers: President, Hon. R. Bulkeley; vice-president, Hon. Henry Newton; treasurer, Laurence Hartshorne; secretary, James Clarke. Our authorities are Murdock's History, *The Letters of Agricola* and "The History of Halifax," by Dr. Akins. The latter author states that in 1791 "a gold medal and ten guineas was offered for the best essay on the natural history of the Hessian fly and the method of stopping its progress in the wheat crop. A volume of the society's proceedings was this year published at Halifax by John Howe."

In 1789 branch societies were organized in the counties of Hants and Kings. The Kings County Society is worthy of special notice for it has maintained an unbroken existence since the tenth day of December, 1789, and I have before me the list of officers taken from the original records and forwarded to me a few years ago by the veteran secretary, Mr. George Hamilton, of Grand Pre.

These early societies led a somewhat precarious life until 1818 when the celebrated series of letters by *Agricola* appeared in *The Acadian Recorder*. The Earl of Dalhousie called a public meeting on Dec. 15, 1818, and a new organization took place. The leading men of the Province were summoned. *Agricola* was called upon to disclose his identity, and under his able direction as secretary agriculture began a new era down by the sea. We cannot follow further the work of this enthusiastic pioneer, John Young, of Willow Park, the father of Chief Justice Young.

In passing we might mention that a society was organized in 1790 at St. John, N.B., under the patronage of Lt.-Governor Carleton, and the Provincial organization dates from 1825.

QUEBEC.

The 6th of April, 1879, should be a red letter day in the agricultural annals of Quebec. Lord Dorchester as Governor had sent out invitations for a gathering on that day at the old Chateau St. Louis. The purpose was to hold the annual meeting of the Agricultural Society. Sir James Le Moine in his volume *Monographies et Esquisses* pp. 20-24, makes an extensive quotation from the *Quebec Gazette* of April 23rd, 1789, beginning as follows:

"On the 6th April the rank and fashion, nobility and clergy of

all denominations, as well as commoners, crowded at the Chateau St. Louis to enter their names as subscribers to the Quebec Agricultural Society, warmly patronized by His Excellency Lord Dorchester. Hon. Hugh Finlay, Dy. Postmaster General, was chosen Secretary."

Then follows a list of 61 names. As Le Moine says, this list would furnish material for a thick quarto of the chronicles of olden times.

The Quebec Society, it will be seen, antedates the Halifax Society by seven months, but it would appear that even Quebec may not claim the honour of priority. Some time ago Mr. W. M. Ramsay, of Montreal, gave me the following extract from the *Montreal Gazette* of December, 1788, in which is an account of a dinner at Franks' Tavern:

"Many loyal and spirited toasts and sentiments were drunk among which were the following: *Success to the new Agricultural Society.*"

It would seem therefore that the Montreal district society was formed somewhat earlier than that of Quebec. In response to a query inserted in *The Star*, Mr. John Horn gave the names of the officers and directors. Sir John Johnston was vice-president, John McKindley was secretary-treasurer, and there were eight English and eight French Canadian directors. Lord Dorchester, I presume, was patron and president of this society as he was of the Quebec society.

The relationship of these two societies is somewhat explained by a pamphlet before me entitled "Papers and Letters on Agriculture recommended to the attention of the Canadian Farmers by the Agricultural Society in Canada," printed in 1790 by Samuel Neilson, Quebec. It contains a list of provisional officers appointed by the Governor on 22nd February, 1789, also "Resolutions of the Quebec Branch of the Society of Agriculture passed by the Directors 31st March and 4th April, communicated to the Society in general assembly, held at the Chateau St. Louis 6th April, 1789." It would appear therefore, that there was a general Provincial Society with a Montreal branch and a Quebec branch and that the Montreal branch was the older having been in existence in the latter part of 1788.

A Horticultural Society was in existence in Montreal in 1812 and also in 1821. It would be interesting to know its relationship to the old society of 1788. I add one more note as a suggestion or hint. In 1835 William Evans published at Montreal "A Treatise on the Theory and Practice of Agriculture," and in the introduction he stated that for seventeen years he had been Secretary to the District and County Agricultural Society.

Adam Ferguson, in his "Notes of Tours in 1831 and 1832," gives the prize list of the fair held in the Upper Town Market Place at Quebec on 18th April, 1832, by the Quebec Agricultural Society and in this prize list reference is made to a pamphlet on flax growing issued by the Society in 1820. It is possible therefore that the original Quebec Society of 1789 may have maintained an unbroken existence down to recent times.

ONTARIO.

Lt.-Col. John Graves Simcoe, as the first Lieutenant-Governor of Upper Canada, issued his proclamation on July 16, 1792, for the election of members of the first Legislative Assembly. The Assembly met on Sept. 17th and adjourned on October 15th. On the 27th of October of the same year the first Provincial Agricultural Society was organized at Newark or Niagara. The year of organization has been given by some writers as 1793, but there is sufficient proof that 1792 is correct. David William Smith was elected vice-president and he gives the year 1792 in his list of offices held by himself, to be found among his papers in the Toronto Public Library. I have gone more fully into this question of date in an article contributed to the special Fair Number of *The Farming World* (Toronto, Sept. 1902), and need not discuss the matter in this paper. Lieutenant Governor Simcoe was patron and a liberal subscriber to the funds. Among the members were D. W. Smith, Daniel Servos, Col. Clark, Robert Hamilton, Ralph Clench, Francis Crooks, William Dickson, Rev. Robert Addison, Thomas Butler, George Forsyth, Robert Ker, Colin McNab, John Symington, Joseph Edwards, John Muirhead, John McNab, Jacob Ball, and — Clement. The custom was to hold a monthly dinner at Freemasons' Hall for the discussion of agricultural questions and the encouragement of sociability. There was an ornamental silver snuff-box, the filling of which was a pleasant duty on the part of the member furnishing the dinner. Whether fairs were held for the awarding of prizes in competitions we cannot say as the records have disappeared. We have one fact on record in regard to this society discovered by Miss Carnochan of Niagara, through the finding of the old record book of the Niagara Public Library: In 1805 this Library took over the books of the Agricultural Society and in payment thereof gave free membership in the Library to all the surviving members of the pioneer Agricultural Society. There were fifty volumes in the collection, valued at thirty-two pounds seven shillings, and the full list may be seen in the article above referred to or in Miss Carnochan's paper on *The Niagara Library*, published by the Canadian Institute in 1895.

Shortly after 1820 societies were organized in other parts of this Province, but the Provincial Society that carried on the Provincial fair for so many years did not come into existence until 1846.

Time is up ,space is more than full. Two or three comments only may be appended. Organization began at very early dates in our various Provinces after British settlement, and the governors were active in promoting the organizations which were composed of the most influential citizens of all ranks and callings. Apart from the Legislature and the town meetings which were the forerunners of our township councils, agricultural societies are the oldest forms of organizations of this Province for mutual improvement.

C. C. JAMES.

UNIVERSITY MEN IN LIFE INSURANCE.

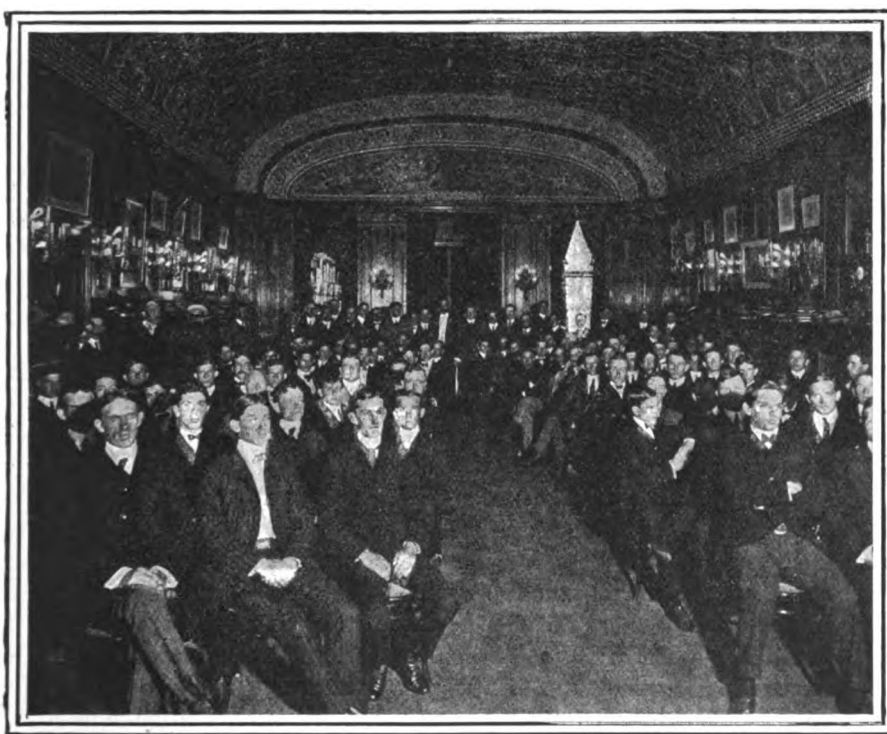
OF late years no problem has received more attention than the bridging of the awkward gap in the lives of college men from the time they leave their Alma Mater until they are successfully started in business. This transition is made all the more difficult by a natural reluctance on the part of young men, who have spent four or more years at a university, to accept positions under men of their own age, who began early in life and have climbed regularly all the rounds of the business ladder. From both sides of the chasm that separates the college graduate from business life, efforts are being made to construct a bridge substantial enough to convey with as little inconvenience and delay as possible the ever increasing number of college graduates seeking to enter industrial life.

In the universities the elective system has served to adjust the curriculum to the different needs of the student according to the profession he intends to follow, while, on the other hand, men of means have been liberally contributing to the endowment of industrial chairs where the student may receive a course of training, intended to lead him directly into a position of trust and prominence. The first effort, that on the part of the universities, has proved a success as far as it has gone. Under the elective system a student is at liberty to take up generally those subjects which, while giving him all the benefits of a university training, in the way of developing brains and broadening his point of view, are at the same time giving him a knowledge of the principles both ethical and economic that will have a direct bearing upon his life work. This, it will be admitted, lays the foundation for a successful career in the broadest and truest sense, and it is quite outside of the range of possibility to expect, that for those intending to follow some industrial pursuit, a university can do more. On the other side the efforts that have been made in the direction of establishing industrial chairs have simply tended to amalgamate the University and the Business College courses.

So far, therefore, the problem remains unsolved and the great body of college graduates who have not chosen one of the academic professions are allowed to drift, after leaving their Alma Mater, from one thing to another, until they come in contact with the persons or circumstances which possess the peculiar power of calling forth their native energies and directing them along the lines for which they are naturally adapted. This idea has been more aptly expressed by the late Henry B. Hyde, when he says "Some men go all through life half

asleep, others until some event awakens them and they develop their latent energies, and then the world admires and respects what is called their genius."

To awaken these latent energies as soon as possible after leaving the universities was the practical turn the problem of transition from graduation to position took in the mind of Gage E. Tarbell, of the Equitable Life Insurance Society of New York. The idea occurred to him over two years ago but it was not until early in the present year that he was able to try his experiment.



A HUNDRED COLLEGE GRADUATES AT THE OPENING OF THE SCHOOL OF LIFE INSURANCE OF THE EQUITABLE LIFE ASSURANCE SOCIETY.

His plan was to select, with the assistance of his managers and the presidents of the different universities, about one hundred young graduates who from their physique, manner and ability, as shown in their college work, seemed most capable of becoming successful life insurance men. Over this class he was to place for one month the most successful among his managers and inspectors, men whose personality would serve to awaken the latent energies of the young men, and who at the same time could give them the necessary technical knowledge of the business.

The greatest care was exercised in the election of those who were invited to attend the school, none but bright, healthy, ambitious young men of good address were chosen, and those as far as possible from that class of boys who had worked their way through college. In this it was recognized that if a boy had devised the ways and means of gaining a university education by his own invention he was most likely to possess sufficient initiative which under proper circumstances would make him a success in life insurance.

During the early part of the year Mr. Tarbell sent the following letter to the heads of the leading universities in the United States and Canada:

"Dear Sir,—It is our intention on or about July 1st, or very soon after the close of the present year of the leading colleges and universities, to start a class of instruction in life assurance, and it is our desire to have this class as largely as possible composed of young men, who have worked their way through college, in whole or in part, or men who are especially recommended to us as desirable by reason of their work during their college course. We would be very glad to have a few of the members of this class come to us from your university.

"It is our purpose to pay the necessary expenses of the members of this class during the course of instruction, which will probably last from thirty to sixty days, and at the end of that time we purpose to try to furnish to such of the members as show an adaptability to our work situations in connection with our various general agencies, where they can receive a guaranteed income, with the opportunity, through industry and perseverance, of making the income several times the amount. We feel that there is no business or profession to-day that furnishes young men with a greater opportunity for advancement or a more honourable career than that of life insurance. We have several thousand men in our employ and the number is constantly increasing, and we especially want to start in the business young men whose education, character and determination will fit them for responsible positions and be of assistance to us in carrying out our great work. To such men the opportunity that we can offer is a grand one. We are writing especially to ascertain if you would be interested in this project and if you believe you can furnish us from your university a few men of the type we desire."

The presidents of the various colleges to whom the letter was addressed entered into the scheme enthusiastically, and with aid of the company's inspectors, selected about one hundred and twenty-five candidates to attend the summer school. The boys came from twenty-four different educational centres, but the majority were

from the great American Universities such as Harvard, Yale, Princeton and Columbia.

From the beginning I was much interested in the movement, and being in New York during the last week of the session I was permitted to attend the lectures during these days and to be present at the banquet which was given to the class at the end of the term. A very unique feature of this event was the continuous rounds of college yells given by the boys between dishes and speeches. In this



GAGE E. TARBELL.

my pleasure was lessened only by the absence of a number of Queen's men, who, I felt, would have been able to give a slogan far more stirring, powerful and sensible than any given on that night.

The classes were held in the Company's library. Every day for a month the students listened to the instruction, experience and advice of some of the most successful life insurance men on the continent. Not only listened to them in class but conversed and associated with them out of class, accompanied them to the different places of interest about the city, and spent evenings with them. In this way the young men had an opportunity of seeing every side of personalities who had been a great success in the business they themselves

were preparing to enter. These were powerful influences to develop any capacity the students possessed for the business. Few agents have ever had this opportunity. Many men on the Equitable staff of agents have never even had an interview with the men this class associated with for a month.

During the last two weeks of the session the students were urged to go out into the city and solicit real business from anyone with whom they could secure an interview. Their difficulties were then discussed in class and the items which were responsible for their failure were pointed out and remedies suggested. In this way the student received more valuable information in one month than most solicitors gain after years of hard work.

In many ways the practical school of preparation has proved so successful that the Equitable Life has decided to continue it from year to year. Every year will suggest improvements, and undoubtedly the effort will be imitated by other industrial and financial institutions.

In the selection of young men for these preparatory classes natural aptitude will always be of first importance, but given two men of the same natural qualifications the college man will receive the preference. To a great many college men this effort of Mr. Tarbell's has directly supplied the missing link, while to many others seeking entrance to other industrial lines he has suggested it.

Of course the motive which actuated the establishing of such a school was not wholly a philanthropical one, the growing needs of assurance must share the responsibility for it. Of late years life insurance has been so developed and perfected that it is adapted to the needs of all classes of people. It is no longer employed only to protect the family and to make provisions for old age. It is sought as an investment, utilized to secure creditors; to protect real estate which is mortgaged; to convert dangerous speculations into safer undertakings, and to indemnify partners in business for the loss resulting from the death of an individual member of the firm. The necessity of placing such a trust in the hands of responsible men is therefore very obvious.

Besides this field for university men, who have an ambition for a life of bustle and competition, life assurance is enlarging another sphere, where positions are filled by men of a more sober and mathematical turn of mind. The actuarial departments of the great life assurance offices are expanding every year and new men are being taken into positions where salaries range from \$750 to \$10,000 a year. Again, for men of this training, there are the actuarial departments of the different governments which must neces-

sarily increase their staffs in proportion to the rapid growth of the insurance business of the country.

In this line of work no time need be lost in the transition from university to business. The preliminary examinations of the British Institute of Actuaries may be taken at the same time as the final mathematical work at the university. With this elementary knowledge it is not so difficult to get a position in some actuarial department.

This is a sphere of work which the men taking mathematical training at Queen's and other Canadian Universities should not overlook. There are many men at Queen's who by working their way through the University show that they possess the necessary energy and ambition for successful business life. Doubtless some of them may make an effort to attend the next session of the Equitable Post-graduate School which is at once an example of far-sighted and commendable business enterprise and of a simple and practical method of bridging the gap between the university halls and business life.

J. J. HARPELL.

BRIEF NOTES ON NEW BOOKS.

Babel and Bible by Dr. F. Delitzsch, Professor of Assyriology in the University of Berlin. Translated from the German by T. J. McCormack (Open Court, Chicago, 50c.)

THE name of Delitzsch has been long and favourably known in the region of Old Testament studies. The father of the present lecturer was a man who united broad scholarship with a simple childlike piety. For many years he stood in the front rank of exegetes, he sent out many useful commentaries on Old Testament books, and produced a translation of the New Testament into Hebrew which is a fine enduring piece of work. The younger Delitzsch has devoted himself specially to the department of archaeology and assyriology, a class of work that demands great diligence, high linguistic attainments and sound judgement. The omniscient editor of the *British Weekly* said some time ago, in reviewing a book on Old Testament Criticism: "The significant fact is that the great firsthand archaeologists, as a rule, do not trust the higher criticism. This means a great deal more than the reasons they can put on people to account for their doubt. It means that they are living in an atmosphere where arguments that flourish outside do not thrive." It would require a lengthy essay to examine and repute this vague oracular statement. But we venture to suggest that in so far as it is definite it is incorrect and in so far as it is indefinite it is useless. The fact is that archaeological discoveries have shown the need for a reconsideration of all the Old Testament problems. The great firsthand archaeologists must use the methods of the higher or literary criticism in order to turn to good account the ancient literature that has been unearthed, and "as a rule" they accept the broad results of the application of these methods to the Old Testament. Dr. Sayce, with all his knowledge and ability, is not a safe guide on this particular point. It is long since Lenormant sent out an edition of Genesis divided into documents along lines similar to those which are now pretty generally accepted. It is quite true that archaeologists and literary critics occupy somewhat different standpoints and sometimes differ in their explanation of particular facts, but it is not fair to state that fact in a way intended to produce the impression that the authority of archaeology can be invoked in favour of the old traditionalism. Our thoughts are led in this direction, not because Dr. Delitzsch's lecture pursues particular problems or discusses in detail the relations of archaeology and criticism, but because it presents in such bold, clear fashion, the general setting of ancient civil-

ization, in which the Old Testament scriptures must now be studied. Speaking of the work of scholars during the last century the author says: Of these silent intellectual labors the world has as yet taken but little notice. Yet this much is certain, that when the sum-total and ultimate upshot of the new knowledge shall have burst the barriers of the scholar's study and entered the broad path of life,—shall have entered our churches, schools and homes,—the life of humanity will be more profoundly stirred, and made the recipient of more significant and enduring progress, than it has by all the discoveries of modern, physical and natural science put together. So far, at any rate, the conviction has steadily and universally established itself that the results of the Babylonian and Assyrian excavations are destined to inaugurate a new epoch, not only in our intellectual life, but especially in the criticism and comprehension of the Old Testament, and that from now on till all futurity the names of *Babel* and *Bible* will remain inseparably linked together."

This may seem to many to be an extravagant statement. We must certainly allow something for its rhetorical form, and the specialist's high appreciation of his own sphere. But an important truth lies behind this statement. A certain type of "scientific" man smiles incredulously at the suggestion that anything brought from the distant past can act powerfully upon the present. He makes the crude superficial statement that the last fifty years of science has done more for the world than all the previous centuries of literary culture. It is time we had done with these false and foolish oppositions. If the student of physical science maintains that the life of humanity has been a long course of slow development it is surely important that all the facts which bear upon that significant process shall be brought to light. The archaeologist, the literary critic, the theologian, they all make a contribution to a study which influences the present by throwing light on the past, and as Dr. Delitzsch remarks, when the result of all this is appropriated and assimilated by the great body of intelligent men their views of the world and religion will be profoundly modified. They will learn to regard the wonderful story of the Old Testament, not as a thing isolated in a mechanical way from the life of humanity, but as one of the most interesting and influential chapters in the records of God's dealings with men. Then the supposed conflict between the Bible and science will be abolished, the "harmonists" will find their occupation gone, and many cheap, useless fads will be cast to the rubbish heap. But we must stop or this "brief note" will swell to undue dimensions.

In conclusion we may say that this is a distinguished lecture from the social point of view, seeing that it was delivered before the

Emperor of Germany. The Kaiser plays many parts. We do not suppose that he lays claim to special knowledge of Biblical criticism, but he was no doubt interested in this clear statement of what modern scholarship is doing for the Bible.

The Creation-Story of Genesis I. A Sumerian Theology and Cosmogony by Dr. Hugo Rodau.

This volume comes from the same publishers, and in a sense it may be said to deal with the same subject, but it is quite different in its character and scope. It deals with a special problem and is a very technical piece of work. It is affectionately dedicated to a lady, Miss Nellie I. Mader, who, whether she can follow all the intricacies of the argument or not must certainly regard it as a labour of love. The only place where anything that can be called popular is to be found is in the preface where we find this statement:

"The Right Rev. D. S. Tuttle, Bishop of Missouri, in delivering a sermon before a body of theological students on 'How to make the people contribute liberally towards the support of the church,' remarked 'you must milk the cows! The more and the oftener you milk them, the more milk they will give.' Although somewhat vulgar, yet the simile fits the case exactly. The same is true of the study of the Bible. The more we study it, the more we draw from it, the more it will yield: milk of life both for the soul and brain! The same idea was also expressed by Dr. Martin Luther who compared the Bible to a beautiful and fruitful tree. The more and oftener we pluck its fruit the more it will give us."

"But not everybody knows 'how to milk,' nor does everybody know 'how to pluck the fruits.' If done carelessly the 'milking,' as well as 'the plucking of the fruit' may become dangerous—we may fall from the tree. If there were some that thus fell from the tree while trying to pluck its fruit, who will dare to say that it was the tree's fault that 'the plucker' fell down? Was it not, on the contrary, the plucker's own carelessness, his own fault?"

"Exactly so it is with the '*Higher Criticism*'. Higher Criticism, if thoughtlessly and carelessly applied to the Bible, will and must be hurtful, not for the Bible however,—for it will remain undaunted,—but for him who aspires to be a 'higher critic,' and how many are there who want to be what they cannot be: higher critics! A true higher critic's aim is *not to destroy* the Bible, but to UNDERSTAND it—understand it *historically*. Thus he will apply the higher critical methods as given by '*history*.' In history the divine will is carried out. The Bible, when thus read in the light of history, will yield fruits of

which nobody ever dreamed—fruits ripened in ages past and saved for our present times to gather.”

“Indeed, the Bible is a wonderful tree with manifold fruits. Tiny shoots have been engrafted on it from time to time by different gardeners—shoots taken from other trees raised on foreign soil. These gardeners belonged to a people that was not surrounded by a ‘Chinese Wall,’ nor were they blind, deaf or dumb. They had eyes and saw, ears and heard, mouths and spoke, and what they saw and heard and spoke they deposited in the Bible. Thus it becomes at once the task of the ‘higher critic’ to trace these little shoots to their original soil, and to inquire from whence they were taken and by whom and at what time they were engrafted, and if we find that this or that little shoot was taken from North or South—Israelite soil, from Egyptian, Babylonian or Persian Soil—does the tree lose thereby its wonderful beauty? Shall we not, on the contrary, admire it all the more? And to have traced, with the help of ‘little clay tablets,’ one of these tiny shoots to its native soil, is the joy of the author.”

In quoting this passage from the preface we have appropriated all that Dr. Rodau has to give in the way of popular illustration. For, as he informs us, “The following investigation is based upon a direct study of the ancient Babylonian inscriptions, though the results reached by my predecessors and a thorough acquaintance with their method of investigation is presupposed here.” That is, it presupposes the theory of documents as worked out by “the higher critics,” and also a scientific investigation of the relation of the account in Genesis I. to the Babylonian cosmogony. The result is that we have to distinguish in Genesis I. three different sources.

1. The P Source. To this belongs *the system of seven days*; the *formula* given above and the different changes that were necessary in order to make the whole agree with the notions of P. The P Source was again based upon

2. *The Semitic-Babylonian Creation Story*. This latter was used only in so far as it agreed with the conceptions, theological and otherwise, of P. All that was against P’s conception was eliminated from it. While thus “criticising” the Semitic-Babylonian Creation Story, P quite unconsciously retained so much of it that he reproduced or came near to the original.

3. *Sumerian Source*, which source represented the creation, not as the result of a *fight*, but as a natural process of *generation* and *perpetuation*.”

The author represents P (the writer of Genesis I. and of the Priestly Code) as the *first higher critic*, and concludes his investi-

gation with the statement: "Let us be thankful to this first of all *higher critics*; he has made it possible for us to follow up his account and trace it to its original source. Thus we have another striking example of P's late age. He lived in Babylonia, was therefore able to acquaint himself with Babylonian ideas and give us an account of the Creation, which, together with his "ten antediluvian fathers" may be traced to the very oldest sources at our disposal—to the Sumerian Cosmogony and Theology."

One might ask whether Dr. Rodau does not here ascribe too much to conscious criticism and too little to the long, slow process of elimination and transformation. While scholars are coming more to admit the exilic date of P, they do not believe that the Babylonian material was taken over by him at that date.

We are not prepared to discuss the Sumerian stage or decide whether Hommel is right when he claims that Ba-u = dingir GUR or whether Dr. Rodau is justified in saying that the statement is false and the reasons nonsensical. We call attention to this treatise simply to show how much special work is now given to every narrative of these ancient records. The archaeologists have many points to settle among themselves before their results are available for the general student, but in the meantime they are doing good work in their own sphere, and out of all this dust something clear must come.

W. G. JORDAN.

CURRENT EVENTS.

It is too much to expect that in a matter which involves so many special and conflicting interests as a protective tariff, there should ever be in any country a condition of stability. The remarkably suc-

Tariff
Changes

cessful free trade policy of Britain is quite unique as to the long and peaceful reign which it has enjoyed. Yet it succeeded a period of constant agitation and change stretching back to the days of feudal exactions. Those who introduced the free trade policy of Britain made no mistake as to what was in the interest of their country. But they fell into error in supposing that what was so obviously suited to British conditions must be equally expedient for all other countries. Now a reactionary faction is making the opposite mistake of supposing that because other countries have not seen fit to follow Britain's example, she must needs disregard her own special interests and humbly follow their's. Thus, under the influence of the idea that what is unique cannot be right, the Mother of Nations is threatened with a fresh period of tariff agitation. A few years ago a vigorous movement swept the country with a view to ridding Britain of that other antiquated incubus, the gold standard, which in the estimation of the new prophets was the cause of all those national evils which are now being laid, often by the same hands, at the door of free trade.

In every country which admits the principle of legislation for special interests, the unstable politician finds it difficult to let bad enough alone. Every possible protective tariff must be defective, from the point of view of certain interests, hence every actual tariff is open to criticism, always plausible and sometimes valid. It is not particularly surprising, therefore, that even in times of prosperity such as America has lately enjoyed, there should arise a cry for alterations in the tariff. There is a passing interest however in the fact that while the agitation in the older provinces of Canada is for the adoption of the American tariff, one of the few American institutions which are frankly admired in this country, the chief agitation in the United States, even among Republicans, is for the reduction of that tariff, under whose maternal cloak the new-born trusts are being suckled through a helpless infancy.

The agitation in the United States against the trusts is not always marked by insight or discrimination; it is, in fact, no more intelligent than the popular conception as to what is necessary for the healthful development of industries. There are two quite opposite ways in which an industrial enterprise, whether a modest private un-

dertaking or a billion dollar trust, may prosper. The margin of net profit between the cost price of an article and the selling price of it is the natural source of all prosperity. There are just two normal ways by which that margin may be increased, and they are the antitheses of each other. The one is to lower the cost price, and the other is to increase the selling price. Enterprise, invention, organization and economy, in connection with suitable natural resources, are the chief means of reducing the cost price; and artificial monopoly is the chief means of increasing the selling price. This monopoly may be brought about either by wide-spread and careful manipulation on the part of the producers, or by the much simpler and safer method of obtaining direct legislation, through a protective tariff, giving to the producer the right of taxing the consumer up to a certain limit. Considering what is involved in the other methods of increasing profits, the simple and effective right of taxation is certainly well worth paying for, either in the shape of handsome contributions to election funds or, as some prefer, in purchasing the successful candidates after election.

It is to be noted, however, that there is nothing in the nature of the case to prevent either private enterprises or great corporations from obtaining dividends from both sources of profit. Thus, in the case of certain of our enterprising Canadian industries, we find that they not only receive hundreds of thousands of dollars in direct bounties from the Government, but add to this handsome revenue large sums which are drawn from nature by means of enterprise, organization and economy. It is therefore not always true, in modern times, that industry will slacken and enterprise die out when gratuitous profits are guaranteed by governments. In former times, when enterprise was slack and men were less eager in the pursuit of wealth than at present, stagnation was the usual accompaniment of government favors, as it still is in many backward countries and among unenterprising industries. Capitalists in the United States in particular, have shown that while they for the most part exact the full income secured to them by the tariff law, they are equally eager to obtain as much as possible from nature as well. From the point of view of domestic trade and a hoodwinked public, even their billion dollar trusts are the most helpless of infants, constantly threatened with collapse if left a day without protection. Yet, from the side of foreign trade and American enterprise versus that of other nations, these same precarious infants boast of their capacity to invade the foreign markets of the world and beat all competitors, whether in quality of goods, promptness of delivery, or price. The majority of the American people, and especially the agricultural class, for whom

protection is impossible, have hitherto tamely submitted to this public method of mocking their intelligence while titling their means. Nay, the ignorant voter is so completely hypnotized as to applaud vociferously the recital of the victories won throughout the world by the very industries which he is being steadily bled to protect from hopeless extermination by foreign competition, within their own country and by their own firesides.

This every-day phenomenon while partly due to the gullibility of human nature in the mass, is also partly to be accounted for by the ability of limited forces highly interested and fully organized, to counteract or overcome enormous power so widely diffused as to be very difficult of concentration. However, important sections of this diffused public interest in the United States are being partially roused and organized, and there is some prospect that before long the legislative bounties and rights of taxation gratuitously granted to the wealthy corporations will be greatly curtailed. A practical separation may then be effected between the legitimate and the illegitimate profits of the trusts, for, in addition to what they honestly obtain by their enterprise and economy they may have to be content with the moderate unearned increment to be reaped from a revenue tariff. Incidentally, with reference to the trust problem, it may be worth nothing, for the benefit of those who dream of short methods with the trusts, that if it is so difficult to get the public to simply refuse to confer on the trusts the right of commercial taxation, how much more difficult will it be to get the public to interfere with them in their normal enterprises throughout the ordinary lines of industry?

In Canada most of these phenomena exist in a less developed form. We find on every hand constant efforts in the line of a more or less effective under-study of the American model. In the less desirable features we frequently seek to ignore this fact by a liberal abuse of our prototype. But the abuse itself usually betrays the imitator, for it, too, is thoroughly American in texture. At the time of the introduction of the National Policy we were asked, after the manner of the American system, to give our infant industries a start in life by protecting them against the cheap labor and the slaughter system of the foreigner. In a few years, say ten at the outside, it was promised that we should be amply repaid for our temporary losses by soundly established and flourishing industries which, with the unparalleled natural resources of Canada at their back, could give us cheap goods and defy the competition of the world. We have waited about a quarter of a century for the announcement, through the Manufacturers' Association or some other

The
Canadian
Aspect.

mouthpiece of our national industries, that this stage has been reached, but we have waited in vain. We have indeed been told, after the American fashion, in many glowing speeches, post-prandial and other, in the effusions of able editors, and in numerous industrial prospectuses, that our industries are the most promising in the world and are already invading distant foreign markets. And indeed the present period of industrial prosperity, whose high prices are brought home with painful iteration to those whose incomes have not shared in the general expansion, gives every appearance of veracity to these representations. Yet the avarice of the man who is his own tax gatherer seems to grow with his gains, and the numerous but inarticulate consumers look in vain for a single industry which is willing to give up its protection. On the contrary, the present wave of prosperity seems to have aroused a desire for more protection, and a more complete binding of the home market to the chariot wheels of our lordly captains of industry.

After many years of fruitless though costly and vigorous immigration policies, population is of its own accord flocking in to take up the vacant lands of the west. While the note of exultation is still high there follows closely the cry that these new comers, before they have well unpacked their chattels or yoked their cattle to the plow, must be forced to pay additional tribute to the prosperous industries of the eastern provinces. Yet this unseemly haste to slay, or at least to thoroughly pluck the goose of golden promise, would appear to indicate either a lamentable ignorance, or a callous disregard of what goes to the making of a unified and harmonious country. Indeed we are threatened with such a schismatic localism that we may expect in time to find our political parties equipped with a distinct national policy for every province. We have been drifting in that direction during the past few years and the effect upon our political parties and our national spirit is not pleasant to contemplate. The cry for a high tariff such as that of the United States is supported by arguments of the most varied character. On the one hand we are told that the American tariff is a very bad one and that therefore we should meet it by one of its own kind. On the other hand we hear that it is a very good one, having built up American industries, and therefore should be adopted in the interests of our manufacturers. The burden of the argument implies that the inventiveness, enterprise, organization and all the other characteristics of American industry are in some way the fruits of the tariff, and if only we raise our tariff to the American standard all these desirable features will be ours. Though this argument is represented in all manner of forms from the crudest to the subtlest, it is simply a ringing of the

changes on the *post hoc ergo propter hoc* reasoning, in itself so worthless. Further, though arguments from the experience of other nations are often most valuable, yet everything depends upon a careful interpretation and study of circumstances. One country may have a high tariff and prosper, another country a high tariff and stagnate. One country may have a high tariff on food and be as little affected by it as Greenland by a high tariff on ice; in another country a similar tariff may mean starvation for thousands. Though in many respects there is a similarity between the products of Canada and those of the United States, yet in others there are great differences, especially in attending circumstances. Then the relative development of the two countries is quite different, and the same tariff would operate very differently in each. In fact it is idle to dream of adopting the American tariff, whether on grounds of hatred or admiration. What we want is a tariff that will suit Canada, not a tariff that will suit this, that, or the other manufacturer upon whom we care to call—a tariff that will be fair to the whole country from east to west and that will have regard to national and not sectional or class interests. There does not appear to be any special national interest served in adding to the normal profits, say of a hat maker, a special tax upon the producers of food, when the producers of food cannot levy any return tax upon the hat maker, no matter how high the duty on grain. Thus the tariff must not be merely superficially or theoretically just and equal, while in its practical operation it is filled with frauds and snares. There are stages in national and industrial development at which certain enterprises may profitably appear, but which at an earlier stage can only be forced into existence at little profit to the investor and at great sacrifice to the consumer. How many Canadian towns have loaded themselves with debt and crippled their future in premature attempts to bonus themselves into considerable cities? But bonusing in towns is only the domestic form of the same mistaken spirit which in national relations squanders the people's money on high tariffs. Ignoring all natural stages in industrial progress, there are those who think that we should at once manufacture everything for ourselves of which we have any of the elements among our natural resources. Thus Mr. Tarte is shocked to find that some of the labor-saving devices in our factories are made abroad when the materials may be had in Canada. In his patriotic zeal he exclaims with pious fervor, "Why the devil don't they manufacture them in Canada?" and forthwith promises to change all that by sweeping reforms in the tariff.

If our manufacturers are able, as is their boast, to produce as good articles and as cheaply as the foreigner, then a moderate tariff,

such as we must have in the leading lines for revenue purposes, should be quite sufficient to determine the purchaser in favor of Canadian goods, which in itself is quite proper. The tariff we now have is in almost all respects more than sufficient for any legitimate protection, and is also an element in the attraction of foreign capital. We are already getting a great deal of American capital into this country, and it is certain to come in increasing quantity, as it is but natural that American capital and enterprise should find it convenient and profitable to work up Canadian natural resources. This, without doubt, will be very profitable to American capitalists, and incidently will develop our country and stimulate our own enterprise. Yet this American investment cannot be of such peculiar virtue as to require that, in addition to their handsome profits, we should deliberately confer upon the investors, by an augmented tariff, the right to collect additional tribute from the people of Canada. In these days of restricted trade and free international investment, a tariff, no matter how theoretically perfect in its selfishness, is liable to have awkward practical results and may as easily siphon out our national purse as fill it.

The unusual rainfall which has watered the northwestern plains during the past two seasons, resulting in the production of magnificent pasturage and phenomenal crops, has undoubtedly given a boom to that part of the country, which, occurring at the proper psychological moment in the settlement of America, has turned many thousands to Canadian territory, and is certain before its effects have waned to bring a much larger influx of settlers. Notwithstanding the records of history or the shorter experience of a single generation, the mass of mankind are still largely the creatures of the hour. If the times are prosperous the difficulties of the past are soon forgotten and the whole future is measured out in the brightest colours by the standards of the day. If, on the contrary, adversity presses and hard times overshadow the land, the future stretches forward in dreary hopelessness. At present, and with very excellent reason, everywhere throughout the west the note of confidence prevails, and, even in its most extravagant forms, is quite catching. Already the future is mapped out for the next quarter or half a century in a geometric ratio of increase from the progress of the present. Yet those who are unpatriotic enough to look both before and after, will be apt to discount the extravagant estimates of the present as liberally as the doleful predictions of the past or those which may follow. There is doubtless as much ultimate promise for

The North-
West Boom.

the Canadian west as for the American, but, considering the vastness of the region, this is neither an immediate nor an extravagant promise. Nothing is more certain, whether we regard the longer experience of the American west or the shorter experience of our own, than that under the exceptional conditions of the present a great deal of injudicious settlement is now taking place, and that in due season we shall have a wail of despair from certain sections which will be unjustly damaging to the general prospects of the country. Those of us who have visited the west during one of its long dry cycles, may recall the despair with which the greater part of the territory to the west of Manitoba was regarded from the farming point of view, and how many regions had been deserted even by the rancher. For the past year or two all that has changed. The white glare of the alkali beds is replaced by the pleasant sight of rippling waters. The desolate plains, thinly covered with little tufts of prairie grass an inch or two high, are now waving fields of the richest pasturage of rare beef-making quality. The ultra-fortunate people, who in the former days had secured ranches upon the creek or river bottoms, are now either driven to the uplands or periodically held prisoners by raging floods. The scattered settlers who formerly saw little promise for the greater part of the country except through irrigation are now submerged in a flood of new comers filled with a smiling confidence that the past two seasons represent the normal condition of the country. Thus indiscriminate settlement goes forward apace, with numerous speculators to assist the boom. For the time being what were formerly the rank lies of the immigration or land agents are now but modest truth, and their task is an easy one for nature speaks more eloquently than they. Yet when this season of outpouring is past, with that saving moisture in the air, which, like a meteorological fly-wheel, mitigates the heat of the day by carrying it over into the night to appease the biting hunger of the frost, we are certain to hear quite another story and to have from the unwisely located as indiscriminate condemnation as we have now indiscriminate praise. We hear nothing now-a-days of the irrigation projects so seriously discussed a few years ago. Yet it may be confidently expected that the Dominion Government will again be called upon for very large contributions towards providing means of irrigation. Doubtless much of this outlay may be a wise investment in the end, owing to the extent of the areas to be permanently maintained under cultivation. Through the filling of so many old lake beds, which the older settlers or Indian traditions tell of having been filled in the earlier days, the transition to the next dry cycle is not likely to be very sudden. The effects of cultivation and irrigation upon the climate of the west will also be followed with interest. In

any case it will be a long time before the tracts available for permanent settlement are filled up. The chief question is that of their selection by the new comers. As to the latter, too, we are naturally anxious to obtain a good class of settlers as the foundation stones of the western social structure. From all accounts those voluntarily coming in from the United States are altogether desirable. It goes without saying that we heartily welcome immigrants from Britain. But in our eagerness to obtain these our zeal sometimes outruns discretion. We should, of course, be quite honest in representing the possibilities of the country. Yet neither wisdom nor honesty would appear to require the use of arguments lately employed by some of our representatives at the Coronation. For instance, it was urged upon the British authorities that it was their duty to adopt active measures to turn the stream of British emigration into Canada. Another argument addressed to the British public has made it appear that upon so slight a preference as the abolition, in favor of Canada, of the revenue tax upon grain, depends the question as to whether or not Canada will be able to fill up its vacant lands and send more grain to Britain. Harangues of this nature naturally give the impression that our vacant lands must in themselves furnish but poor attractions for the settler, if pressure is needed to direct emigration towards them, or if the profits of farming depend upon a bounty from the British consumer of two or three cents a bushel upon the wheat sent them. As a matter of history, both the expedients suggested have already been given a fair trial in this country and singularly failed to achieve their purpose. If wisely located in Canada immigrants will find plenty of land, both east and west, which under normal conditions will furnish ample returns for their cultivation regardless of precarious gratuities.

Another Colonial Conference has come and gone without any appreciable disturbance of the cordial yet independent relations which have so long existed between Britain and her self-governing colonies.

Canada in particular has every reason to congratulate herself on the part taken by her chief representative throughout the numerous functions associated with an historic occasion. Sir Wilfrid Laurier, by his never-failing courtesy, dignity and tact, not only won for himself a high place in the regard of all classes in Britain but distinctly raised the status of his country in the eyes of the British public. Canada was presented to the people of Britain as a country whose affectionate respect for the centre of the Empire was not only strong

The
Colonial
Conference.

and intelligent, but enhanced by the fact that it was felt by a people who were quite conscious of their independence and jealous of their rights. In fact the dignity and self-respect of Canada could not have been more worthily upheld, or her interests more unobtrusively yet effectively guarded, than they were by Sir Wilfrid Laurier. The Colonial Conference, though a disappointment to some of the more sanguine or visionary, has been most serviceable in clarifying the imperial atmosphere and enabling things to appear once more in a clearer light and a more normal perspective. Changes of the gravest import for the whole Empire, and for the colonies in particular, were confidently expected to result from the conference. But no sooner had the sectional interests and the vague aspirations been faced in their practical import by responsible statesmen, than their utter incompatibility with the essence of our British institutions became so obvious that they were immediately dropped. Proposals of a practical nature, such as those connected with the improvement of the means of communication between the various parts of the empire, whether by postal, telegraph, or steamship facilities, were quite profitably discussed, and in these lines the only positive results of the conference are likely to be found. But anything involving a restriction of constitutional powers, such as would result from placing the power and liberties of the Empire at the disposal of one part of it, was found to be so anti-British as to be out of the question.

Though we are not yet aware how fully the matters brought up for discussion were entered into, yet evidently the larger visions of imperialism rapidly faded away in contact with the actual, and are not likely to be important factors in future conferences for some time. The present conference has thus rendered a great service in proving in a direct and simple manner what cannot be done. In the face of its strong negative results, the floods of reckless oratory and the acres of fine writing which have been indulged in since the outbreak of the South African war, bidding adieu to the old order of things and heralding fairyland visions of the new have, in retrospect, a ludicrous bathos, yet not without touches of the pathetic. Those whose imperialism took the shape of a desire to build up a consolidated and all-conquering military power, have been particularly disappointed. After the spontaneous assistance rendered in South Africa, they had counted with confidence on the willingness of the colonies to formally bind themselves to furnish large contributions towards an increase of the British navy, and the maintenance in each colony of a highly organized military system, with considerable bodies of thoroughly trained and fully equipped troops ready to serve in any part of the world at a moment's notice. And all these forces

were to be absolutely at the disposal of the British Cabinet, or any hotspur in it who had sufficient influence to endanger the peace of the Empire. The utter subversion of colonial self-government involved in any such plans, seems never to have occurred to people whose own power and authority were thereby to be increased. Both Sir Wilfrid Laurier and Sir Edmund Barton, while fully recognizing the principle of mutual assistance, evidently declined to consider the possibility of their respective states binding themselves to a blind-fold support of an irresponsible policy on the part of one section of the Empire. Britain is not bound to support the colonies in any foreign measures which they may devise. Their one constitutional limitation is that they cannot in themselves have any responsible foreign policy which other nations must respect. Britain has the right to veto or disown all their aspirations in this respect, and is therefore completely safeguarded in her responsibility for them. The colonies, on the other hand, have not the slightest constitutional right or power to interfere with any of the foreign entanglements of Britain. Thus, should the colonies consent to assume a fixed obligation to contribute to Britain's military power, they would find themselves liable to be involved in wars which were neither of their own making, nor upon which they would have the means of passing an effective judgment. Where, however, the colonial assistance depends upon voluntary action, while the colonies would have no right to prevent Britain from making war, yet colonial opinion would be carefully considered when upon it depended the colonial support to be expected. Such a condition is not merely the only one at all consistent with our constitutional independence and command of British respect, but is of the highest advantage to the more stable elements in Britain itself. If Britain wishes to completely involve the colonies in her foreign policy, she must give to the colonies a corresponding share in the control of that policy and be equally ready to support their plans. But that raises the much more radical question of imperial federation and whether the colonies and the mother country are prepared for the mutual surrenders which that involves. But there is a diminishing assurance of any practical scheme in that direction. Another region whose fog was lifted by the conference was that of trade. The possibility of obtaining one-sided preferential treatment was soon disposed of. Even a common tariff for the Empire was shown to be impossible. Theoretically the interests of the different parts of the Empire may be harmonious, but practically they cannot be brought under the same tariff. The colonies are committed to the financial policy of raising revenue by taxing imports, and in most cases this is united with a system of protection for home industries. But, both in

its financial aspects and in its protective features, an imperial tariff against the world would operate in the most unequal manner. An import duty on food and many raw materials would be a bounty in the colonies and a corresponding tax in Britain, while on many industrial products it would be the opposite. The obvious outcome of the whole discussion in and around the Conference, is that the parts of the Empire must retain their independence and self-government, and the numerous favours which they may very properly grant each other must not impair this principle.

S.

Erratum—In Dr. Jordan's article "Brief Notes on New Books," page 230, for "can put on people" read "can put on paper."

PRIZE ESSAY ON THE INFLUENCE OF JOURNALISM.

The Chancellor of Queen's University, Sir Sandford Fleming, has offered the sum of two hundred and fifty dollars (\$250), to be awarded for the best essay or essays on the following subject:

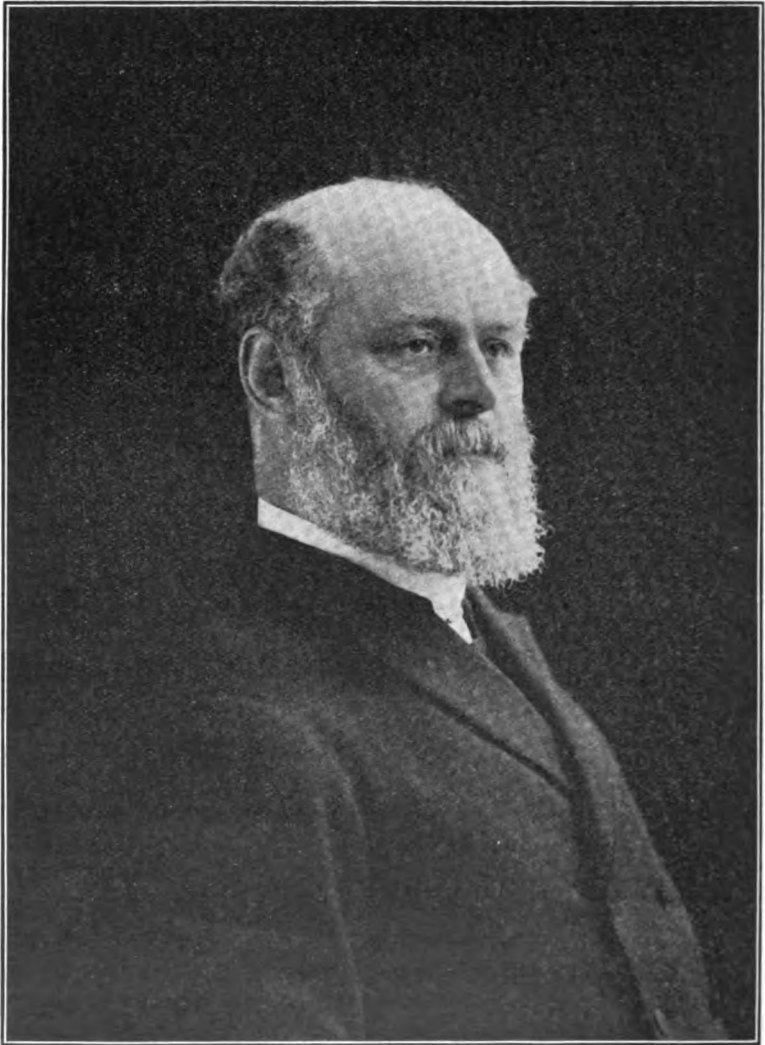
"How can Canadian Universities best benefit the cause of Journalism as a means of moulding and elevating public opinion in the Dominion?"

THE CONDITIONS ARE AS FOLLOWS:

1. The competition is open to all resident Canadians, or Canadians temporarily absent who remain British subjects.
2. It is not desired that the essays should exceed eight or at most ten thousand words in length.
3. Each Essay must be clearly type-written.
4. Essays are to be sent in before Dec. 1st, 1902, to "The Registrar of Queen's University, Kingston, Ont.," signed with a motto, along with a sealed envelope containing the name and address of the author.
5. The prize of \$250 may be given, at the discretion of the Judges, to one, or may be divided between two or three of the competitors.
6. The essay or essays adjudged worthy of a prize are to become the property of the Alumni of Queen's University, and to be read in public at the Alumni Conference next February.
7. The Judges are Mr. G. S. Willis, representing the Canadian Press Association, the donor of the prize, and the Principals or acting Principals of McGill and Queen's Universities and of University college, Toronto.

By order,

GEO. Y. CHOWN,
Registrar, Queen's University.



PRINCIPAL GORDON.

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PRINCIPAL GORDON.

QUEEN'S is to be congratulated on the appointment of her new Principal. Dr. Gordon is likely to prove a worthy successor to the great man whose name is permanently identified with the name of our University, George Monro Grant. They were life-long friends and fellow-workers, both animated by the same spirit, devotion to the highest interests of Canada, to the cause of broad culture and liberal religion. Principal Gordon may be counted upon to stand for the things which Principal Grant stood for. His appointment is a guarantee that there will be no break of continuity in the traditions of Queen's. He is, besides, a man of singular personal charm, who has never failed to inspire affection in all with whom he has come into contact. His practical wisdom and administrative ability have long been well-approved in the councils of the Presbyterian Church, the same school in which the splendid talents of his predecessor were formed.

Readers of the QUARTERLY will be glad to read the following brief sketch of his career:

Daniel M. Gordon was born in Pictou, N.S.,—Principal Grant's birthplace—on the 30th day of January, 1845; educated at Pictou Academy and at Glasgow University—again Principal Grant's Alma Mater, and indeed associated with so many names well-known in Queen's, that it may almost be regarded as our spiritual mother-city. He graduated there as M.A. in 1863, as B.D. in 1866, thus fulfilling all academic righteousness. The summer term of 1865 he spent at the University of Berlin, acquiring not only the language indispensable to students of the higher thought in all departments, but also a breadth of theological outlook which valuably supplemented his training in Scotland. In August, 1866, he was licensed and ordained in the High Church of Ayr—Robert Burns's

"Auld Ayr wham ne'er a toun surpasses
For honest men and bonnie lasses."

Returning to Nova Scotia just as Principal Grant did under similar circumstances—poor old Scotland was not big enough to hold these vigorous and patriotic sons of the expansive West—he served

a short probation in the ministry for sixteen months as an ordained missionary, supplying the congregations of St. Paul's Church, Truro, and of several stations in that vicinity. So widely did his name go forth from this somewhat obscure field of labour that in 1867 he was inducted at the extraordinarily early age of twenty-two, into the important pastorate of St. Andrew's Church, Ottawa, where he remained until 1882. In 1869 he took a step which has greatly furthered in many ways the effectiveness of his life work. That was the year of his marriage to Miss Eliza MacLennan, daughter of the late Rev. John MacLennan, of Belfast, Ireland, and of the parish of Kilchrennan in Scotland. From what one hears of this lady, it seems permissible to infer, that in her an acquisition has been made for the University, especially for the fairer portion of it, which is in its way scarcely less matter for congratulation than the gain of Dr. Gordon himself.

In 1879, at the request of the present Chancellor of Queen's, who was then chief engineer of the Canadian Pacific Railway, he was one of a small party, who after travelling to the Pacific by the American Union Pacific Railway, returned across Northern British Columbia through the Peace River Pass, and over the prairies, to Winnipeg. A delightful account of this journey was afterwards published by him under the alluring title: "Mountain and Prairie." He was thus along with the other two great bulwarks and makers of Queen's, Principal Grant and Sir Sandford Fleming, one of the spiritual pioneers and prophets of our great North West.

His faith in the future of that wonderful land, and his interest in its welfare, led him in 1882 to accept a call from Knox Church, Winnipeg, as successor to Dr. Robertson, when the latter was appointed superintendent of missions. There he remained until December, 1887, when he removed to St. Andrew's Church, Halifax. After a pastorate of seven years in this congregation, he was appointed in 1894 to the chair of Systematic Theology and Apologetics in the Presbyterian College, Halifax. He was called thence as Principal of Queen's on the 5th of December, 1902. It is to be hoped he may soon be able to enter upon his new duties.

In 1895 he received the honorary degree of D.D. from Glasgow University, his Alma Mater. In 1896 he was Moderator of the Presbyterian Church of Canada.

Dr. Gordon has always been a prominent figure in the courts of the Church, especially in the General Assembly. His handsome person, attractive manner, and singularly graceful and fluent speech, combined with the sagacity and moderation he has always shown, have given him a position in that assembly which is entirely his own. On the whole it may be said that no man in Canada is so decidedly

"*persona grata*" with all parties in the Presbyterian Church as he. On several occasions he has been entrusted with delicate and difficult ecclesiastical missions of the diplomatic order, and in every case he has executed his task with great ability and tact. In 1875 he was one of the deputies, Principal Grant being another, sent by the Synod of that branch of the Presbyterian Church in Canada which was connected with the Church of Scotland, the Auld Kirk in Canada, in short, to represent the cause of Union among the different Presbyterian bodies in Canada, before the General Assembly of the Church of Scotland. On that occasion the Canadian deputies made a great impression in Edinburgh, and succeeded in carrying with them the sense of the Assembly. In the same cause he was appointed in 1886 to visit British Columbia and persuade recalcitrant congregations there, who still stubbornly adhered to their old connection with the Church of Scotland, to throw in their lot with their other brethren of the Canadian Presbyterian Church. He was again entirely successful. Every single one of these congregations soon afterwards fell into line.

But Dr. Gordon is more than an ecclesiastic, and is quite at home in other than church circles. He is in the best sense of the word a man of the world, fond of travel and responsive to all the nobler stimuli of life. Besides his wanderings through every part of Canada, where he has made friends with all that is distinguished or significant, he has been everywhere, seen everything, and come to know everybody worth knowing. In 1889, for instance, he took a trip round the world. During his pastorate in Winnipeg, he was Chaplain of the 90th Battalion and as such accompanied his regiment through the North West campaign of 1885. On this occasion, to round off his experience of every side of life, he was under fire, being present at the battle of Batoche and receiving the medal and clasp. He was immensely popular with his comrades in arms and made a lasting impression upon their minds.

This bald sketch of a career full of distinction, no less than of wide and various effectiveness, requires no explanatory commentary. The general resemblance of type to Principal Grant, as well as the extraordinary coincidence in detail with his career, will strike every alumnus of Queen's and need not be drawn out into any tedious insistence on particulars. The change of government which we are to undergo will involve no painful throes of abrupt transition. The same spirit as of old will continue to be represented in the person of our chief. Our new Principal, like his predecessor, is a man of singularly broad humanity, ripened in a school of large experience, who has touched the life of his country at many points. He will not only

be a strength but an ornament to us. His great personal charm and sweetness of character will help to bind the affections of our students and alumni more closely than ever, if such a thing be possible, to their Alma Mater. The QUARTERLY greets him with a hearty welcome! The sons and daughters of Queen's will rally round him with their old loyalty undiminished.

JOHN MACNAUGHTON.



DANTE AND HIS ILLUSTRATORS.

SCARTAZZINI, in his *Prolegemena* for the *Divina Commedia*, quotes a saying of Gioberti which affirms that an adequate account of the influence of Dante on Italian art would require a history of all the illustrations which have been suggested by the great poem, beginning with those of Botticelli, and coming down to those of our own days. Such an exhaustive study scarcely comes within the scope of the present paper. It is possible now, however, thanks to the beautiful reproduction of Botticelli's drawings for the *Divina Commedia*, brought out within the last few years, under Herr Lippmann's supervision, in Berlin, to study the first serious and continuous effort made at an artistic interpretation of the poet's Vision, while in the illustrated edition of the *Inferno*, just published in Florence, by the Alinari Bros., we have the latest of the many attempts at reproducing the scenes of the poem. To the consideration of these two works this article will be mainly directed.

To Botticelli belongs the honour of being the first illustrator of the *Divina Commedia*, who can in any way be called an interpreter. Even during Dante's lifetime the influence which has since so vitally affected the art and literature of Italy was at work, and all through the fourteenth century illustrated manuscripts of the *Divina Commedia* illuminated after the manner of the missals were frequently produced. Magnificent as these volumes often were, and elaborate as were the designs introduced into the initial pages and letters, they never rise beyond the usual work of the miniaturists, or illuminators, and have no pretence to being either commentaries or interpretations of the poem. The Illustration to Canto XXIX of the *Purgatory*, from a Dante M.S.S. of the XIVth century, here given, is a fair example of this kind of work, with its conventional griffin and rigid saints. Even in the early printed editions the numerous vignettes

which adorned the pages were principally valuable as guides to the following Canto. The poem of Dante, in particular, speedily became well known, and was repeatedly copied, even after the spread of printing had proclaimed the downfall of manuscripts. As late as the



final years of the fifteenth century many copies of more than usual magnificence were produced for those wealthy book-lovers who looked askance on printed books, and considered it the mark of a specially valuable library when all the books were transcribed by hand. It was to accompany a manuscript copy of the *Divina Commedia* that Botticelli's drawings were made for Lorenzo di Pier de' Medici, and in many of them the influence of the miniaturists is clearly shown, although the general character of the drawings unmistakably suggest Botticelli's own manner.

To Botticelli this work came as a labour of love. His thoughts had been turned to Dante long before he began the task of illustrating the *Divina Commedia*, and already some of his finest pictures had shown the direct inspiration of the poet, especially the famous "Assumption of the Virgin," which belongs to the year 1475. In this picture, though in great part executed by Botticelli's pupils, the composition is entirely the work of the master himself, and here Dante's description of Paradise with its nine concentric circles and ranks of the heavenly host, is closely followed. The fascination of his theme increased and grew more absorbing, as it is still wont to do with lovers of Dante. Vasari tells us that "his speculative mind found a congenial task in annotating a portion of Dante; he also illustrated the *Inferno* and caused it to be printed. In these pursuits

much time was spent, and as he neglected his work many complications arose in his affairs." Vasari is often inaccurate, and the annotations seem to be doubtful, but it is evident that much of Botticelli's time was devoted to the study of Dante, and the influence of Savonarola, which about this time so deeply affected his character and changed the ideals of his art, must have confirmed him in his new passion. Henceforth he painted only religious subjects and attached himself to the new sect, the Piagnoni, which had formed round Savonarola. It is easy to comprehend that to a mind imbued with the austere and noble ideals of the great Reformer, the deeply spiritual nature of Dante would naturally appeal. On these drawings he lavished all the strength of his art, and they are perhaps the only ones which are at all adequate to the theme, for those which Michael Angelo is known to have executed on the wide margins of a printed edition, perished with other possessions of the Florentine sculptor who had inherited them, in a shipwreck off Civita Vecchia, in the eighteenth century—an irreparable loss, for of all the artists of the Renaissance who had felt the influence of Dante none was so akin to him in genius as Michael Angelo.

Two things impress us as we examine the drawings of Botticelli: first, that they seem to spring naturally from a patient study and sympathetic comprehension of Dante; secondly, that they are instinct with Botticelli's own personality. The thought is Dante's faithfully interpreted, but the interpreter is Botticelli, and I find in no other illustrator of the *Divina Commedia* so strong an expression of original sentiment, combined with such accuracy in rendering the poet's meaning. This arose, no doubt, in great measure from Botticelli's intimate acquaintance with his subject—he had studied it so long and faithfully that he was sure of his ground and could venture to express himself in his own way. Is not this true inspiration? That Botticelli's own imagination was at work is evident in the wealth of ideas and the play of fancy which enter into his work. He too was a dreamer and saw visions. His designs lack perhaps the grandeur of composition which would certainly have been found in Michael Angelo's rendering of the same themes, but there is throughout a nobility and simplicity of design which increases as the work progresses, and the artist has caught the intensely human sentiment which throughout the poem relieves the terrible tension of the theme.

The date of the work is uncertain. It is probable that it was begun about the time of Botticelli's visit to Rome, but not finished till the early years of the sixteenth century. In the meantime a printed edition of the *Divina Commedia*, with twenty illustrations of the first nineteen cantos of the *Inferno*, was published at Milan, in 1811,



by Cristoforo Landino, which shows such evident and striking resemblance to Botticelli's drawings, as proves conclusively that the engraver must have been acquainted with some of them. Indeed to this edition some art critics, and among them Walter Pater in his "Renaissance" studies, have referred, as if the plates were Botticelli's own execution, but they are poorly executed, and no where rise above the level of the ordinary work of this kind, as a comparison of the facsimiles published in Lippmann's edition together with the genuine Botticelli drawings will show. Pater's essay on Botticelli was published in 1870, and it was not until 1882 that the original volume of the latter's drawings passed from the Hamilton collection in Hamilton Palace, where G. F. Waagen had first called attention to it, into the Berlin museum and began to be well known, in Lippmann's beautiful edition, with its excellent commentary and notes. These drawings are made on sheets of fine parchment, the text being on the other side.

Botticelli's illustrations were originally a hundred and three in number, but of these eight have been lost. The greater number of them are in the Museum in Berlin, about twenty being in the Vatican, where they were placed after the death of Queen Christina of Sweden, in whose possession they then were. The drawings are for the most part in outline, with but little shading. Those for the *Inferno* are somewhat crowded with detail. Botticelli seems determined to omit nothing, and in many cases different points of the same scene are given in one picture, where also Dante's and Virgil's figures are often two or three times introduced. The designs gradually become much less intricate, and in the *Paradise*, the greater number of the drawings contain only the two figures of Dante and Beatrice, which, beautiful as they are, are repeated almost to the point of monotony. Only one drawing is here reproduced, a fine example of delicacy of outline and precision of detail in every particular. It is a scene from the XXXIst canto of the *Inferno*, where in the ninth circle the fettered giants stand like towers along the sides of the rocky chasm. As usual in these drawings Dante and Virgil appear several times. The giant with the horn is Nimrod, who accosts the pilgrims with discordant babble, and is tauntingly admonished by Virgil to keep to the horn round his neck, which he appears unable to discover. The huge figure with the right arm pinioned behind him is Ephialtes. Dante's description is minutely followed even to the fifth turn of the chain. Antaeus, alone unchained, is lifting the pilgrims down to the frozen deep below. The larger illustration of the same subject here given is taken from Alinari's edition just published. A comparison of the two is interesting, for a gap of four hundred years divides the art-



ists. The modern conception is forcible and well carried out, the huge brutish forms but half showing in the dim light above the rocky shelf where Virgil and Dante stand alone.

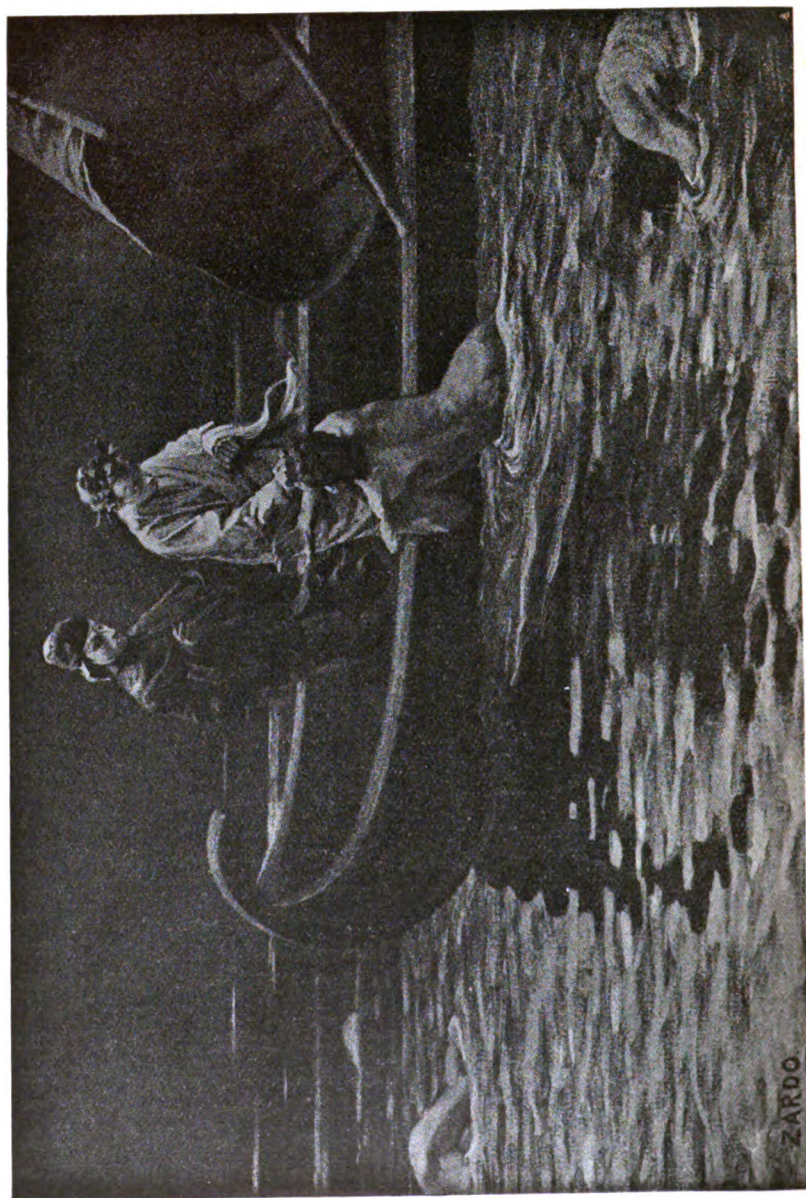
In the opening canto following the diagram of the *Inferno*, Botticelli shows us Dante wandering sad and alone in the dark wood. Here, after encountering the three wild beasts, he is met by Virgil, a benevolent-looking old man with a long beard, dressed, by one of the delightful anachronisms of the Middle Ages, in a long gown with a cape, and a furred hat. This comforting and confidence-inspiring figure is beside him in all the dark scenes of the succeeding cantos, which are depicted with wonderful originality and play of fancy. With the *Purgatory* we find more distinctly the Botticelli known to us in his pictures. Many of the figures in the latter scenes and in the *Paradise* recall the flowing draperies and graceful lines of his *Spring* and *birth of Venus*, his angels are akin to the reverential and beautiful beings of the *Nativity* and *Adoration of the Magi*, while at the same time there is more than a trace of the quaintness and precision which marked the work of the miniaturist, commemorated by Dante in his praise of Oderisi of Gubbio in *Purgatory*. C, XI.

"the glory of that art

Which they of Paris call the limmer's skill."

And through it all is the haunting sense of a dual conception, the love of beauty, the grace of human life, expressed in flowing line, in tender flower, in gleaming pool, and delicate tracery of tree, struggling with the austere sense of the awful reality of things unseen. and the judgment to come. All this and much more is read in these drawings of Botticelli, much which had lain dormant in his heart. and which the pregnant words of the *Vision* had quickened into life.

But it was by no means only in the direct illustration of the *Divina Commedia* that Dante's poem had borne fruit in the field of art. It is not too much to say that it influenced the work of every painter of sacred subjects, while many were directly inspired by it, as in the case of Andrea Orcagna, whose *Inferno* in the Campo Santo at Pisa, has brought upon him the accusation, as Scartazzini tells us. of having been unduly influenced by Dante, when he introduced there the monstrous figure of the three-headed Lucifer, and other tremendous images taken from the poem. In Fra Angelico, Leonardo da Vinci, Raphael, Michael Angelo and many other artists of the Renaissance the source of inspiration is evident. The subject has been a fascinating one from the time of Dante to the present century, when Italy, Germany, England and France, with greater or less success. contributed to the artistic interpretation of the great work. Flax-



man, among English illustrators, has acquired a certain renown in his outline drawings, which have been frequently reproduced, but they strike one as strangely inadequate, cold and unsatisfactory, failing notably in points where the poem calls for special force and inspiration, as in the illustrations for the Paolo and Francesca, and the Farnata scene. Where there is merit, it is that of a lifeless statue, and any attempt in action fails entirely. His figures are all bloodless creatures, with no speculation in their eyes, no marrow in their bones. But Flaxman was bound by the tradition of the Antique, like other artists of his day. Among French artists, perhaps among any modern illustrators of Dante, Gustave Dore has undoubtedly obtained the greatest popularity, for what cause it is rather difficult to say. He is in no sense a commentator of Dante. His somewhat coarse fancy runs riot among the images before him, and he has little or no room for the spiritual meaning. He is perhaps best in the Paradise, where he has been often successful in producing something of the effect of illimitable space and light which the poem suggests. He has the merits and defects of the popular and the prolific artist. Among Italians the finest work has been done of late years. Scaramuzza some years ago issued a splendid set of drawings of the *Divina Commedia*, now very difficult to obtain, and several other illustrated editions of differing merit have been brought out.

Little more than two years ago Cav Vittorio Alinari of Florence conceived the idea of publishing a new illustrated edition of Dante. The manner of production, a quite novel one, was as follows: In May, 1900, a competition was proposed among Italian artists, who were invited to prepare sets of drawings, illustrating any two cantos of the *Inferno*,* consisting each of a frontispiece, a large design illustrating the text, and an ending. The drawings were to be submitted to a jury of artists, the firm of Alinari Bros. having the right to purchase such of the remaining drawings as should be found suitable for the purpose in hand. Thirty-one artists contributed designs, which were exhibited in Florence, in June, 1901, and a unique collection was the result, the first prize being given to Zardo, one of whose drawings is here reproduced. It represents Dante and Virgil journeying across the Styx towards the City of Dis. The artist has chosen the moment when Virgil is thrusting back Filippo Argenti, the proud Florentine, condemned for his brutal rage to wallow, with other kindred spirits, in the foul waters. All Zardo's drawings are marked by the same boldness and simplicity, the same broad effects of light and shade, and the same strong drawing. They illustrate the VIIIth and

*The Purgatory and Paradise are now in course of preparation.

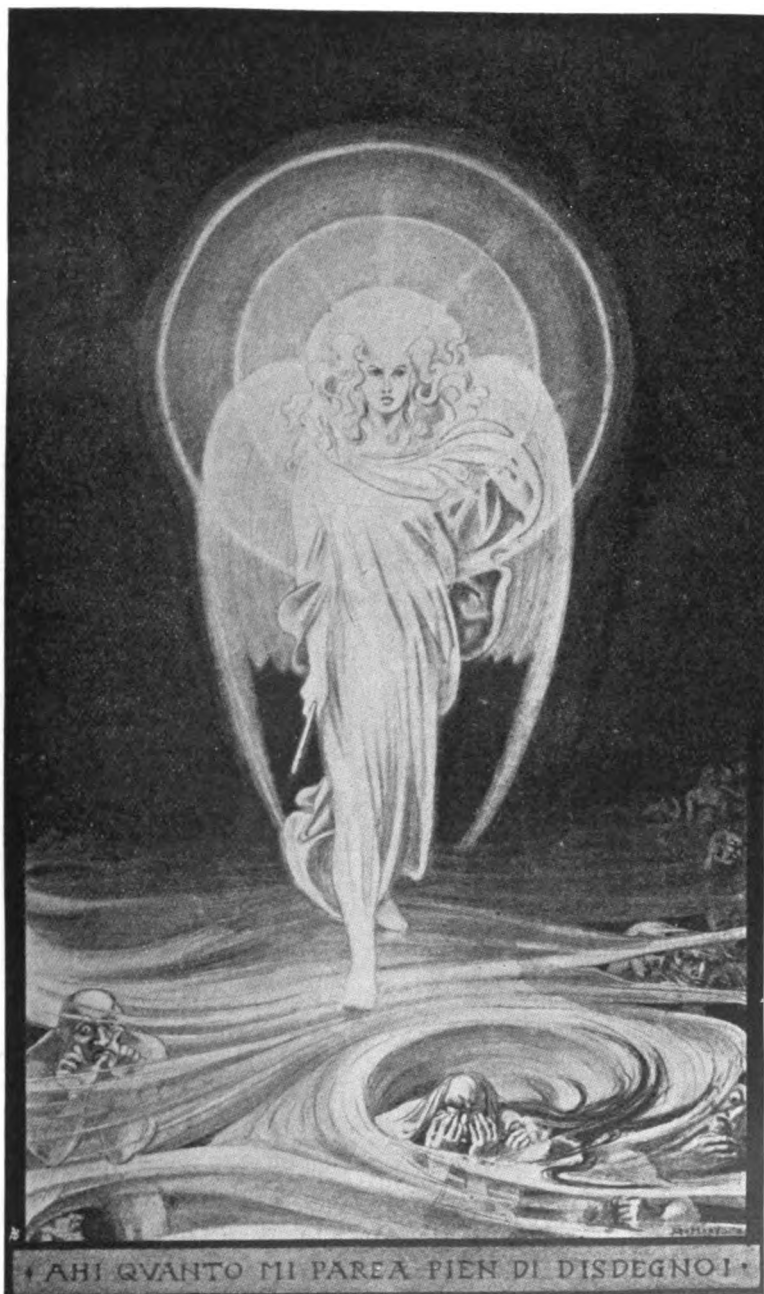
IXth cantos. The large design where Dante and Virgil stand before the entrance to the burning city of Dis, with the delivering Angel's form dimly seen beyond in light, is also very fine. The second prize, gained by Armando Spadini, was awarded to the drawings illustrating the XXVth and XXXth cantos, both among the most painful of the subjects illustrated, and although they show considerable ingenuity and artistic skill, the greater number of the other drawings are far more attractive.

The illustrations thus brought together have a special attraction, for not only was the idea for the production of the new edition a novel one, but every drawing has the stamp of individual originality, and



if, as would naturally be the case, the book does not form a uniform interpretation of the poem, or possess an equal degree of artistic merit in every part, this lack is more than compensated for by the increased variety and interest it affords, and it is an important example of the different tendencies of the present Italian school in the field of art. It was in great measure with this object in view, that the plan of the work was conceived, as we are reminded in the preface.

It is of no little interest, too, to note in how many different ways, artists of the same age and country interpret their great poetic masterpiece. We find all the various Italian schools of painting represented, and the themes offered in the text give wide scope for indi-

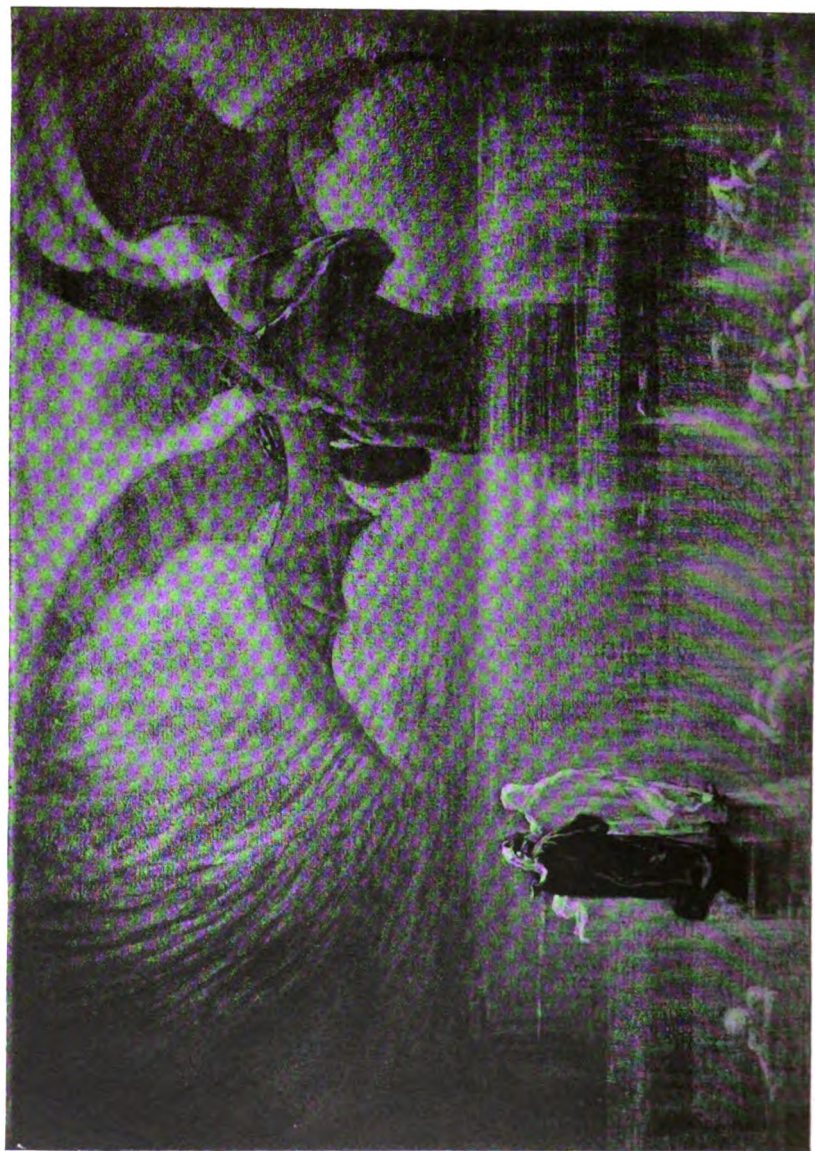


vidual taste. In some cases the modern tendency to realism has carried the artist further in that direction, we instinctively feel, than the subject warrants. In a land of shades the sense of the spiritual should never be lost, but in the large design of Paolo and Francesca hurried with other lost souls on the whirlwind, and in the studies of the Furies at the gates, of the City of Dis, we are somewhat harshly reminded of the painters model, who tempered the artist's inspiration. The small vignette here produced of the heads only of Paolo and Francesca, is admirable. The despairing, passionate faces, overcome by the agony of love, with the mystery of unending death overshadowing them, stir the imagination strongly. Many, indeed, of these smaller designs are beautiful, and it has been a difficult matter to choose among them for reproduction for this article. The drawing standing at the beginning of the first canto, which shows Dante gazing across the tangled branches of the dark wood, also heads this paper, and is one of the finest. Among the more conventional designs, though not unduly so, is the very striking illustration of the Angel coming across the dark waters of the Styx, to open the gates of Dis to Dante and Virgil, who are beset by demons and Furies refusing them admittance.

“And now there came o’er the perturbed waves
 Loud crashing, terrible, a sound that made
 Either shore tremble, as if of a wind,
 Impetuous, from conflicting vapours sprung.
 more than a thousand spirits
 Destroyed, so saw I, fleeing before one
 Who passed with unwet feet the Stygian shore.
 He, from his face removing the gross air
 Oft his left hand outstretched, and seemed alone
 By that annoyance wearied. I perceived
 That he was sent from Heaven, and to my guide
 Turn’d me, who signal made that I should stand
 Quiet, and bend to him. Ah, me! how full
 Of noble anger seemed he! To the gate
 He came, and with his wand touched it, whereat
 Open without impediment it flew.”

In the original many of the drawings are printed in monochrome, blue, red, brown, or black, which in some instances adds greatly to their suggestiveness, as in the case of the fine illustration of Farinata in his fiery tomb, “Erect with breast and front, e’en as if Hell he had in great despite,” one of the most striking figures in the *Inferno*. This is printed in dull red, giving across the heavy gloom





of the deep shadows the effect of a lurid glow. The composition is very simple, with absolutely no attempt at detail, but the figures are remarkably fine, the attitude of Farinata being especially noble and the dimly-seen figure of the listening Dante finely expresses his painful and rapt attention. This subject was evidently a fascinating one to the competitors, for two other compositions are given, both much inferior to the one here shown.

Each canto has its illustrations, in many cases there are two or three on the same theme; no subject is so terrible or so difficult but it appeals to some artist, and finds an exponent. There is no lack of imagination or originality in these drawings, but it is serious and restrained, with nothing of the riotous fancy that offends in Dore's work. On comparison with earlier artistic efforts, it is worthy of note, how completely the grotesque is banished. Modern artists have learned the truth, to which Walter Pater refers, when he speaks of "the grotesque, so often a stumbling-block to painters, who forget that the words of a poet, which only feebly present an image to the mind, must be lowered in key, when translated into form." Even the monstrous image of the three-headed Lucifer, forever champing his victims, who stands half imbedded in ice, in the lowest depths of Hell, has nothing ignoble or grotesque about him. There are still traces of his native dignity in the terrible form, in the vast wings which stir the icy winds of that realm of Death. Here, as in the picture of Farinata, the tone of the engraving aids the imagination, the impression of intense lifeless cold being much deepened by the blue colour in which the original is printed. This effect is of course lost in the reproduction here given. The volume closes with a striking little vignette of Dante and Virgil, still in the darkness, standing before the opening into the pure air, where they once more behold the stars. Unfortunately this drawing has been omitted with others, not without regret, for lack of space.

And so a fresh proof is given, if proof were needed, that the inspiration set free six hundred years ago to work in the hearts of men is still strong and fresh as then. Like the Bible, like Shakespeare, the theme of Dante's poem is of too universal a nature ever to grow old, as long as the life of man and his eternal destiny retain their awful interest for all; and so long will his poem inspire the painter. For Dante was himself a painter, his images are so vivid, so definitely realized, that the picture is ready made. It stands already limned in the mind of those who know and love him, and they hail instinctively with interest and delight each attempt at a further interpretation of the Vision.

LOIS SAUNDERS.

*WIRELESS TELEGRAPHY.

BRIEFLY defined, wireless telegraphy is the science or art of communicating over long distances without the use of wires. Ten years ago we heard practically nothing of this subject; to-day it is engaging the attention of all the civilized nations. On the other hand the art of communicating over short distances without the use of wires is as old as man; indeed we may say it is a natural phenomenon. A speaker communicates his thoughts to his audience without the use of wires, and no doubt Adam communicated with Eve in the same way. This natural system is limited as to distance for reasons which will be referred to later.

A second system of wireless communication consists in using the eye as a receiver instead of the ear. In this system certain signs or signals are exposed at the transmitting point so they may be seen at the receiving point; or a ray of light may be sent from the transmitting point and received on a screen at the receiving point. In the first case it must be known at the receiving point what is meant when a certain sign is exposed at the transmitting point. In the second case the ray of light is intercepted at the transmitting point for a long or short period, and it must be known at the receiving point what is meant by these various interruptions or combination of interruptions. The first of these systems is used largely by warships and vessels of all kinds, different flags being raised to convey different messages; the second system is used largely in time of war and is known as the heliograph system.

With the direct light of the sun or a very powerful electric light the heliograph system can be used over considerable distances, but it has the disadvantage common to all systems in which a ray of light is used, viz.: it cannot be operated between points where opaque bodies intervene, nor in foggy weather.

A third system is that popularly known as the Marconi system, in which electric waves are employed to carry the message, suitable apparatus being employed to detect the impulses of these waves.

Two other systems of wireless communication utilize respectively the sea and the earth as a medium for transmission. As these are only in the early stages of development, no further reference will be made to them.

All of the systems referred to have one feature in common, viz.: communication is effected by means of a wave motion. For instance, when we speak, the mechanism of the larynx sets up a wave motion

*Illustrated lecture delivered at convocation of Queen's University, May, 1902, by L. W. Gill, B.Sc.

in the atmosphere, radiating from the mouth. This wave motion, acting on a delicate membrane suspended in the ear, sets it in motion. The motion of this membrane is interpreted by special nerves which connect the membrane with the brain.

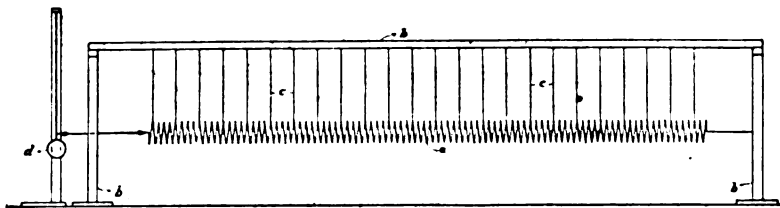


FIG. I.

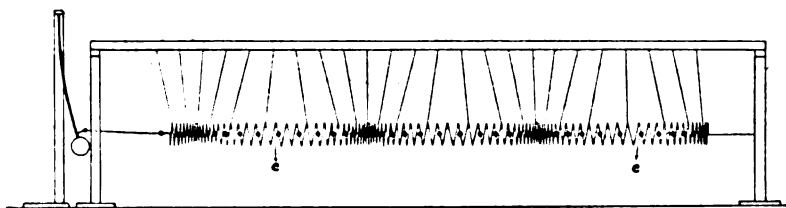


FIG. II.

(The action in a medium carrying a sound wave was illustrated at this point by means of specially constructed apparatus shown in Fig. 1. This apparatus consisted of a long spiral spring *a*, made of copper wire and supported to a framework *b* by means of elastic bands *c*. One end of the spring was connected to a pendulum *d*. An oscillation set up in the pendulum gave a series of periodic waves travelling along the spring as in Fig. II. Paper discs *e*, attached to the spring made the motion visible at the back of the lecture hall, and clearly exhibited the "nodes and loops." The motion of these discs corresponded to the motion of the particles of the atmosphere transmitting a sound wave.)

To give the particles of the atmosphere the motion which constitutes a sound wave requires a certain amount of energy which depends on the mass of the particles, less energy being required to send a sound wave through hydrogen than through any other medium because it is the lightest. As this energy is dissipated very rapidly in all directions it is obvious that if an attempt is made to communicate over long distances by means of sound waves a considerable amount of energy is required. Further, we find that at the generating or transmitting point the disturbance must be so great that serious damage to person and property may result. For these reasons communication by means of sound waves is limited to comparatively short distances.

When, however, we come to deal with light and electric waves we find that the medium of transmission is practically without mass and a small amount of energy is sufficient to communicate over very long distances, while the disturbances affect neither person nor property.

In dealing with sound waves we have something tangible to work with. We can deal with the atmosphere as we deal with other matter and it is not very difficult to get a fairly complete conception of sound waves. It is not so easy, however, to get a conception of the action in the case of light and electric waves. These are transmitted by an entirely different medium, about which we know comparatively very little. This medium is known as the ether. It is not difficult to reason that such a medium exists and that it permeates all matter. For instance, if we take all the air out of a glass jar sound will not travel through it, yet light will; if there were nothing left in the jar, how could the motion which constitutes light be carried through? Again, one magnet will attract another when placed in a vacuum, which shows that force as well as motion is transmitted through some medium independent of the atmosphere. Now it is impossible to conceive that a force can be exerted at a distance without some means of communication, without some connection. We know of no case where such a condition exists; and as our knowledge is all relative we are forced to the conclusion that there is some medium through which the force is transmitted.

Again, we know that the atmosphere extends only a comparatively small distance from the earth, yet light travels millions of miles from the sun and stars and must have a transmitting medium. We have abundance of experimental truth that light is a wave motion of this medium. Light will penetrate all matter to a greater or less degree. Hence we must conclude that this medium is omnipresent.

We thus see that any effort to go beyond a mere description of physical phenomena brings us to the necessity of assuming an omnipresent medium which we must endow at least with the properties of inertia and mobility. If it did not possess these properties a wave motion could not be transmitted through it. As inertia depends on mass, scientists have endeavoured in various ways to measure the mass or density of this medium, but so far without success. We must not conclude, however, that the ether does not possess this property simply because we cannot make instruments delicate enough to be affected by it.

Much more might be said on the nature of this medium, but a further discussion would be rather out of place here.

The wave motion of this medium which constitutes light differs

from the sound wave in that the motion of the medium is at right angles to or across the path of the wave. The velocity and number of waves per second also differ. In the case of sound the velocity is about 1000 feet per second, while light travels at the rate of 186,000 miles per second. The number of sound waves per second, considering only audible disturbances, varies approximately from 20 to 40,000 per second, while the number of light waves per second varies from 400 million millions to 800 million millions, depending on the color of the light.

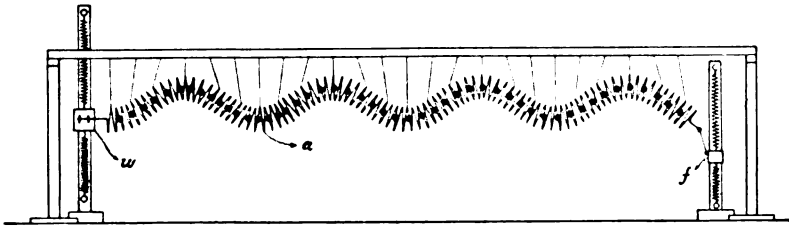


FIG. III

(The mode of propagation of light waves was illustrated at this point by means of the apparatus arranged as in Fig. III. A weight w suspended by two springs was substituted for the pendulum. By starting this weight oscillating vertically, a transverse wave was set up in the spring, a , as shown in Fig. III.)

Electric waves, often known as Hertz waves, from the name of the investigator whose work in this field first attracted world-wide attention to it, are of the same character as light waves and are transmitted by the same medium. All the evidence at present at hand points to this conclusion. The velocity by measurement is the same, but the number of electric waves per second is less—not exceeding hundreds of millions per second.

When an electric wave strikes or impinges on a body which will conduct electricity, it gives rise to oscillations of electricity in that body, just as a wave on the sea will give a vertical motion to a ship. If, then, two wires are placed parallel to one another and electric oscillations are set up in one, the electric waves generated by these oscillations, radiating in all directions, will strike the second wire and set up oscillations in it.

The oscillations in the second wire may be detected in various ways. The most common method consists in connecting to the wire an instrument known as a coherer. This consists of a small glass tube, into which two metallic plugs are fitted. A small space is left between the plugs, and this space is partially filled with clean metallic

filings. One plug is electrically connected to the end of the wire and the other plug is connected to the earth or some large metallic body. If now the terminals of a small battery are connected one to each plug, no appreciable current will flow through the filings, the resistance of which is very high. When, however, electric oscillations are set up in the wire, the resistance of the filings is at once diminished by the passage of the oscillations and a local current will flow through the battery and filings. This local current may be used to actuate an ordinary telegraph sounder or any other device.

If the oscillations in the wire are stopped, the local current will continue to flow until the filings are disturbed, when the resistance at once increases. A very light tap on the coherer is sufficient for this, and in commercial systems the tapping is done automatically by means of the local current.

In the Marconi and other systems the wires are placed vertical, and the coherer is placed between the wire and the earth. The various systems in use differ principally in details and methods of connection.

(The setting up of electric oscillations in a wire or other conductor by means of electric waves was here illustrated with the apparatus as shown in Fig. III. The oscillating weight w corresponded to the electric oscillations in the wire at the transmitting point; and the weight f , set oscillating by the wave motion of the spring, corresponded to the electric oscillations set up in the second or receiving wire. The weight f was connected to the spring by means of a fine elastic band.)

One of the chief difficulties in the use of a wireless system is the interference in the case of two transmitters situated near one another and sending messages at the same time. This interference is analogous to two persons attempting to speak at once. Anyone within hearing distance would not be able to distinguish definitely what either speaker was saying.

To overcome this difficulty Marconi has perfected—at least he claims so—what is called a syntonic or tuned system. In this system each receiver is made to respond to waves of a certain length, and waves of any other length will not affect it. Each transmitter can be made to radiate waves of any required length. When it is desired to communicate with a certain station or receiver, the transmitter is adjusted to give waves to which that particular receiver will respond and to which no other receiver will respond; in other words, the transmitter is tuned to the receiver. Communication is thus established with any one station without disturbing the rest.

It is interesting to contemplate the possibilities of such a system.

Imagine each individual to be provided with one of these receivers. It would be necessary of course to keep a registry of the wave length corresponding to each receiver. When you wished to communicate with a friend, of whose whereabouts you were not certain, you could go to the nearest station, look up the registry, and, after tuning the transmitter, call your friend. If you received no reply you might conclude he was dead.

From the remarks heard on this subject one is inclined to the opinion that the majority of people look upon this new system of wireless telegraphy as being very remarkable and mysterious. A short time ago the whole world stood amazed when Marconi announced that he had received signals across the Atlantic, a distance of about 2,000 miles. Why should people think this so very mysterious? Surely it is not so mysterious as sunlight or starlight which travels millions of millions of miles. What is 2,000 compared to millions of millions? Again, light will pass through glass, and indeed through all substances in a slight degree. Why then is it so wonderful that some substances are transparent to electric waves? Some substances which are opaque to one kind of light are transparent to another. Some substances which are practically opaque to all ordinary light are transparent to X-rays. All these various rays are of the same character and differ only in wave length. Whether a substance is transparent or opaque to these waves depends principally on the wave length.

We know, further, that sound waves are transmitted or communicated through the walls of a building; then why not electric waves?

Last, but not least, may be mentioned the phenomenon of gravity. It is true we know the law of gravitation, but this does not in any way explain that mysterious force to which everything is transparent. Why do we not marvel at this? It is strange how little these commonplace yet mysterious phenomena attract our attention. If we compare the mysteries of wireless telegraphy with those of the ordinary phenomena above referred to, we find they are, to say the least, no deeper. And the apparatus for sending and receiving in the new system are but primitive when compared to the eye and ear.

It is true that the new system is mysterious when we consider how little we know about the medium through which communication is effected. It adds, however, another grain of knowledge, which helps to impress upon us how little we know and how little we ever can know concerning the true nature of the things around us.

L. W. GILL.

THE HISTORY OF HEXATEUCH CRITICISM.

THE criticism of the so-called books of Moses has now arrived at a stage when it can be said to have a history, using that word in its noblest sense, not of a mere collection of facts arranged in a more or less orderly series, but of a living movement which has passed through definite stages of development and attained to results of great importance and far-reaching influence. It is not uncommon to meet with representations of Old Testament criticism as consisting of a confused mass of contradictory conjectures and to hear the Pentateuch problem cited as a striking and supreme example of this confusion. We can quite understand how this view may easily arise from a second-hand and superficial acquaintance with the subject. The problem is a highly complex one; it requires careful consideration to understand its nature; and its history needs to be handled sympathetically.

We need to bear in mind two things in a comprehensive treatment of such a subject. First, that any attempt to explain the growth and meaning of this varied collection of histories, laws and poems, must leave many of the minor problems unsolved, and therefore will have many points open to attack by the keen defender of the traditional dogma who feels that "the critics" must be served with their own sauce. In justice to the late Dr. Green, of Princeton, who conducted a long and arduous warfare against the new views, it must be said, that he was often able to fasten upon weak points and show defects or contradictions in the critical theory. That kind of polemic seems to be very effective, so long as we forget that a scholar's real business is not a paltry peddling with details, but a bold and intelligent effort to reach a positive construction, which does full justice to the whole range of facts. "Keil, Green and Bissell represent the traditional view of the origin of the Hexateuch. The reason why this cannot be maintained is stated briefly: The presence in the Hexateuch (and in other parts of the Old Testament) of too many facts which conflict with it." (Dr. Driver's Introduction, p. 3.) This statement standing alone might seem to be curt and dogmatic, but occurring in a volume which furnishes one of the ablest expositions of these facts, throughout their whole wide and varied range, it is fully justified. The same writer's sober statement as to the method and spirit in which the critical point is often assailed is worthy of calm consideration. "It is remarkable how inexact and indiscriminating is the knowledge of the critical position displayed frequently by those who

come forward to oppose it; and how largely even the more prominent of its recent opponents appear to rely upon rhetorical depreciation and invective. It is difficult to understand what force such weapons can be supposed to possess. No serious issue has ever been decided by their aid; and the present one, it is certain, will form no exception to the rule." (Preface, XVII.) With the people referred to, it is not a case of calm scientific investigation, but rather a passionate defence of tradition, the destruction of which seems, to them, to involve the loss of all that is sacred and divine in the ancient Scriptures. They could not therefore maintain the calmness and subtle discrimination shown by Mr. Gladstone in his apology, "The Impregnable Rock of Holy Scripture"; it was only an imperfect satisfaction that they could draw from the thought that, on many points, there was division among the critics. "The spectator from without, perceiving that there is war, waged on critical grounds, in the critical camp itself, may surmise that what has been wittily called the order of disorder is more or less menaced in its central seat; and he may be the more hardened in his determination not to rush prematurely to final conclusions on the serious, though not as I suppose vital, question representing the age and authenticity of the early books of the Old Testament in their present literary form." (Page 21.)

But second, we must remember that all facts are not of the same relative importance. A theory may have its general frame-work resting upon a firm foundation of facts correctly co-ordinated and fairly interpreted, and yet have within its field regions that are not yet fully and finally explained. Mr. Gladstone, who had a very imperfect knowledge both of the natural sciences and of this special field of literary and historical criticism, said in the book just mentioned, "It is not to be supposed that the learned in linguistic studies have arrived at unanimous and final conclusions in these grave matters. If we compare their studies, as to unanimity, continuity, and ascertained progress, with that of the natural sciences, the comparison will be not at all to their advantage." (Page 201.) The purpose of this essay is to show that Biblical criticism, in this particular branch of its investigation, will bear to be fairly compared with any science that has to deal with a large body of complex circumstances and dissimilar facts. "The consensus of so many acute and able scholars, of different countries, of different communions, and approaching the subject with different theological and intellectual prepossessions, cannot, as some would have us believe, rest upon illusion: it can rest only upon the fact that whatever margin of uncertainty there may be, within which, as explained above, critics differ, there is an area within which their conclusions are deduced, by sound and

legitimate logical processes, from a groundwork of solid facts." (Driver's Introduction Preface XVII.)

A complete history of this subject would include a consideration of the following questions :

I. An investigation of the origin of the belief that the first books of the Bible were written by Moses.

II. An enquiry how far this tradition was accepted by independent thinkers, even in ancient times.

III. An examination of the Jewish legends which gathered around the growth of the Canon so as to bring out the facts to which they indirectly bear witness.

IV. A survey of the difficulties which perplexed the ablest Jewish rabbis of the middle ages, when they attempted to make the facts revealed by careful study square with the traditional theory.

V. A consideration of the powerful impulse given to critical studies by the Reformation, and the effect of that great movement on this department of study.

VI. A review of the hindrances placed in its way by the authority of the Roman Church, as well as by the post-Reformation development of the Protestant movement with its mechanical theory of an infallible book, and verbal inspiration.

VII. Finally, an account of the strictly modern movement from the clue furnished by Astruc in his "Conjectures" down to the latest statement, placed before the English reader, in the recently published "Oxford Hexateuch." In the present essay after a very slight reference to the other divisions of the subject, an attempt will be made to present a few suggestive facts from the last and most important chapter of the history, showing the development of the "Documentary Theory."

There are many sketches of this history in various languages either in separate volumes, or as introductions to new commentaries and editions of the text. For a complete bibliography the student may consult any of these, or the various articles in the Hastings Bible Dictionary, and the Encyclopedia Biblica. Here it may be sufficient to mention Wellhausen's article in the "Encyclopedia Britannica," Addis' "Documents of the Hexateuch," "The Oxford Hexateuch" vol. 1, Holzinger's "Einleitung in den Hexateuch," Westphal's "Les Sources du Pentateuque." Dr. Cheyne's interesting book on "The Founders of Criticism" is not so much a connected history as a selection of striking incidents, and a series of brief biographical notes. Ample provision is now made for the English reader in such books as Dr. Driver's Introduction, Dr. Duff's "Old Testament Theology" vol. II, Professor Bacon's "Genesis of Genesis," Professor

McFadyen's "Messages of the Prophetic and Priestly Historians," and President Harper's "Constructive Studies in the Priestly Element in the Old Testament," etc.

Westphal presents the facts of the case in a form that is both interesting and instructive, he has an eye for the critical moments and sums up the results in a striking picturesque style, so that we seem to have the advantage of German thoroughness combined with French brilliance. Following sympathetically his arrangement of the material, we are able to see the inevitableness of the whole movement, and the significance of its various stages. He covers, in his history, all the ground marked out above, and treats the latest period with considerable fulness as well as fine insight. To use his own words he attempts to show, "how out of the bosom of tradition, to which the mass of the faithful were clinging, a doubt as to the authenticity of the Pentateuch could arise; how this doubt at first timid and uncertain, found in the intellectual centres lit up by the Reformation the means of transforming itself into a scientific idea; how the discoveries of Astruc, and the impulse of the independent criticism made of this idea a burning question which during more than a century was the scorn of science and kindled the passions of thinking men, finally how criticism pacified, finished by establishing agreement among exegetes as to an idea of the Mosaic books far removed from the data supplied by tradition." He then proceeds to point out that this agreement concerns *one important element in the question, the settlement of the literary problem, the division into four chief documents*. This result he regards as possessing high apologetic value, because for a fable to become legendary and reappear in the domain of history, as a triple condition, would be a very difficult thing to understand. Speaking of the various workers in this field, Westphal says, "They have, in spite of themselves and in spite of us, furnished the most brilliant apology for the first pages of the sacred history, in bringing to light, by the discovery of the sources of the Pentateuch, the harmony of the gospels of the old Covenant." (Page XXX.) We, however, are not at present concerned with the apologetic bearing of the Documentary Theory, or with the results that flow from it in the domain of historical criticism; to state briefly what it is and how it arose, is our chief aim.

I. The late Dr. Delitzsch was not only a Prince among Hebrew scholars, he was also a man of evangelical spirit and conservative temper, who was gradually driven to accept the new views (Cheyne's *Founders*, page 154). He stated that "nowhere in the canonical literature of the Old Testament do the terms 'the law,' 'the book of the law,' 'the law of Moses,' cover the Pentateuch in its present form."

Commenting on this, the Oxford Hexateuch says: "But in view of the use which the Chronicler makes not only of the Levitical Institutions but also of the genealogical forms of Genesis it can hardly be doubted that the book of the Law of Moses which served for him as the norm of Israel's worship, comprised the united documents much as we have them now. In the Greek age, then, to which the Chronicles must be assigned, the Mosaic tradition must be regarded as fully formed. But it must be borne in mind that the earliest testimony to Moses as the author of the Pentateuch is thus found to date a thousand years after the Exodus." (Vol. I, page 20.)

Those who wish to go farther back than this endeavor to show, from such texts as Ex. XVII, 14, Numb. XXXIII, 2, Deut. XXXI, 9-13, 24-26, that the books claim to have been written by the great leader. To which the reply is made that these statements refer only to particular incidents or laws, and that the impression the Pentateuch gives of Moses is not that of a historian or scribe but a man of action who on exceptional occasions wrote at the express command of Jehovah. ("Videtur Pentateuchus potius de Mose quam a Mose scriptus."—Hobbes.)

This tradition of Mosaic authorship if the whole of the five books was evidently of gradual growth, and from this point of view the comparison of the two following statements is instructive. "As it is written in the book of the law (or teaching) of Moses," II. Kings, XIV, 6. "As it is written in the law the book of Moses," II. Chron. XXV, 4.

II. "The Jewish people naturally maintained and propagated this view. In Moses it found a teacher of a divine lore which could only have been derived from the wisdom of God himself; and in his priority before the later civilization of Greece the champions of Judaism delighted to discover proof that their nation had thus supplied the most brilliant of the Mediterranean races with the primary truths of religion. The learning of Palestine and the philosophy of Egypt were in this matter entirely at one. The Rabbis in the schools, Josephus addressing the cultivated minds of the Empire, Philo wrestling at Alexandria with the problem of combining the highest forms of Hellenic thought with the ripest fruits of Hebrew faith, all started from the same fundamental assumption. It passed by natural sequence into the Christian teaching. It is ascribed by the Evangelists to Jesus Christ. It appears in the records of the apostolic preaching, as it also underlies the epistolary arguments of St. Paul. It is the common theme of the Talmud and Christian apologist; and became the accepted basis of the entire conception of historical revelation alike for the Synagogue and for the Church." (O.H., page 20.)

In those days the authorship of the book was hardly a matter of vigorous discussion, and keen, critical investigation, but those who care to consult the authorities cited by Holzinger and Westphal will admit that "the by-ways of both Jewish and Christian literature are not without traces of departure from the customary view." This dissent may appear sometimes in fantastic forms, but it, at least, shows that there was no absolute acquiescence in the tradition which had now become a dogma. The Clementines, a Judaizing sect, in the second century, held the view that Moses founded a religion on oral tradition, and confided this tradition to seventy elders. But after his death, these men, contrary to his desires, reduced the law to writing, and their edition of the law is the original of the Pentateuch. On this view the five books instead of having Moses as their author exist in their present form against his will, and have passed through a great many changes. (Westphal, vol. I, page 14; Holzinger, page 25.) If the records were fuller probably other instances of divergence from the common view, besides those cited in the works referred to might be found; but further it must be borne in mind that the conditions were not favorable for critical studies, and both in the Jewish and the Christian Church the tradition was as a rule accepted with unquestioning faith. As Holzinger points out, it is quite possible to lay too much weight on chance remarks of the Church Fathers, who were not conducting a critical examination, and, in some cases Westphal may have done this; but when Clement of Alexandria distinguishes the law of Moses from the canonical Pentateuch which he regards as a revision and restoration (*anagnorismos*), and Jerome is willing to allow his opponent to speak of Moses as author of the Pentateuch or Ezra as its restorer, the traditional belief is evidently not so mechanical as it became in later times ("*Sive Mosen dicere volueris auctorem Pentateuchi, sive Esram ejusdem instauratorem operis, non recuso.*")

III. This appearance of freedom and openness soon passed away, and indeed the life of the Church ran in other directions. Judaism became even more barren, and in writing the Talmud, as Westphal says, it constructed its own mausoleum. "Jewish theology, deprived of the spirit of revelation, rested for a while stationary, and then marched towards a quick decline. Shut up to a past which was its glory, it deified the Torah which was its code, then the Mishnah which was its interpretation. The Mishnah commented upon in turn became the Talmud. Our Lord said: "ye make the word of God of none effect by your traditions," but at the time of reducing the Talmud to writing, three or four centuries later, this would have been blasphemy for these traditions were said to proceed direct from Moses and to have a sacredness equal to the Law."

It is not necessary here to reproduce the Jewish legends, which grew so luxuriantly around a point which was now of such great importance, namely, the formation of the Canon, and the work of the so-called Great Synagogue (see Ryle, Budde and other writers on the Canon). It is sufficient now to note that from this mass of fictitious and contradictory material it is possible to disentangle facts which have only received in modern times their proper emphasis, and full explanations, such as the importance of Ezra's work and the great activity of post-exilic Scribes.

It is interesting also to note that the tradition accepted by many of the Church Fathers differs from the common Jewish opinion, and is based on Esdras IV, (written in Palestine, 81-91 A.D.) Its main elements are (1) The sacred books were destroyed when Jerusalem was ruined by the Babylonians. (2) They were dictated afresh by Ezra, acting under miraculous inspiration. (3) He also delivered other books, a secret canon not to be delivered to the profane. ("Esdras, Dei sacerdos, combustam a Chaldæis in archivis templi restituit legem, nempe qui eodem spiritu quo ante scripta fuerat plenus fuerit." Augustine.)

IV. About the 12th century doubts began to be expressed by Jewish scholars, in a timid fashion, of course, for these men were risking their position in the Synagogue, and their place in Paradise. Aben Ezra (in Italy, 1165), one of the most celebrated Rabbis of the middle ages, astronomer and poet, left a variety of writings. His commentary on the Pentateuch is in obscure language so that it also needs a commentary. He sees the vanity of the customary allegorizing and quibbling but is afraid to apply thoroughly his own method, hence he says, "It is a mystery let those who understand it not, reveal it." On Deut. I, 1, he speaks plainly: "This is what Moses said to the Israelites beyond the Jordan, this word must then have been written on the other side of the river in order that the place where Moses spoke could have been called 'beyond the Jordan.'" But feeling that he has gone too far he returns hastily to his enigmatic style. Here are specimens of the puzzles which he left to those who were to follow him: "You will not grasp the real sense until you have laid hold of the secret of the twelve—Moses wrote the law—Then the Canaanites were in the land—In the mount of the Lord it will be provided—His bed was a bed of iron—Resolve this riddle and you will know the truth." Since then there has always been here or there among the Rabbis some solitary witness for freedom and in recent times Jewish scholars have borne their fair share in the critical movement. The following summary may be quoted as a fair specimen of Westphal's style of summary upon the result of each stage in this long process.

"This then is the whole destiny of the belief in the Mosaic origin of the Pentateuch, which seemed at first sight imposed by God on the people of Israel. Foreign to the most ancient literature, mysterious in its origin and variously interpreted by Jewish doctors who circulate it, it triumphs by the aid of superstition, maintains itself as long as possible by force, rules under the shelter of compulsion, and finally makes shipwreck on the writings of certain Rabbis of the middle ages whom it succeeded in intimidating but not convincing." (Page 40.)

V. The great Reformation movement as a revolt against external authority, and an appeal to nature and conscience was born from the critical spirit, and quickened free investigation in all spheres of knowledge, but it would be foolish to expect all at once, contributions to a special problem of this kind. The atmosphere was generated and the soil prepared but this particular branch of Biblical science had to be born, and in its earliest days, as we shall see, the battle for existence was severe. The great leaders of the religious movement in favour of freedom and reform had other work to do; Luther's noble translation of the Bible was a splendid gift to his people, not to mention now his unceasing battle in the face of fierce opposition and cunning intrigue. In discussing questions relating to the Canon of Scripture, he shows the union of boldness and reverence which is essential to strong character and real leadership. This spirit is expressed with clearness and sharpness in many of his great sayings. "The Scripture is only a servant of Christ, as for me I do not give myself to the servant, but to the Master who is also Master of the Word."

"From the study of the text to the criticism of the text is only one step and that step was soon taken. Already Luther refrained from pledging himself for the faithfulness of tradition, in the question concerning the authors to whom certain Old Testament books are ascribed. For him the fact that Moses was the editor of the Pentateuch was not proved, and it is very probable that if he had had the time and freedom of mind needful to give a thorough study of the question, we should have had from the pen of the great reformer considerations which would have saved more than one critic of later times from the charge of impiety." (Westphal, page 50.) That may be perfectly true, but criticism must make its own way on its own merits and not live under the shelter of a great name; for that is only a new form of the old principle of authority against which the reformer had fought so valiantly. The struggle for greater freedom in theology and science, the use of printed books, and the increased activity in the study of history and philology among Jews and Chris-

tians was a real and absolutely necessary preparation for the more special studies of later times.

"Further critical movements among the Rabbis of the middle ages belong to the general history of the Old Testament science. They are only indirectly related to the question of the Hexateuch. The rise of Hebrew studies in connection with the Renaissance and Reformation did not lead to critical investigation of this kind. The real interests of the Reformation lay far away from such things; yet we have one real methodical investigation from the time of the Reformation, that of Carlstadt." (Holzinger's *Einleitung*, page 29.) But this one investigator shows a capacity for delicate literary criticism, and though conservative in temper is forced to the conclusion that from the books themselves it may be fairly argued that Moses is not the author of the five volumes, and that only a foolish person would attribute to Moses the passage concerning his death. Westphal, however, does not bring out the exact point with perfect clearness in this case. Centuries before, it had been conceded in the Talmud that Moses did not write the last 8 verses of Deuteronomy, though some maintained that he wrote these verses prophetically. But Carlstadt's point is that none but a foolish person would maintain that he wrote these verses, *and as there are other parts in the same style, the position that Moses did not write the whole may be defended.* ("Defendi potest, Mosen non fuisse scriptorem quinque librorum: ista de morte Mosis nemo nisi plane dementissimus Mosis velut auctori tribuet"—Quotation as given by Westphal, page 50.) After speaking of the different styles, Carlstadt says: "Ex quibus demonstratur, defendi posse, Mosen non fuisse scriptorem quinque librorum, quum sepulto Mose filium orationis idem videmus, non eundem Mosen, ridiculum sane fuerit, defunctum Mosen haec verba loquutum; 'Mortuus est Moses jubente deo et sepelivit eum in terra Moab, et non cognovit homo sepulchrum ejus,' isthaec et caetera, quae sequuntur, nemo nisi plane dementissimus Mosis velut auctori tribuet." For context see Holzinger, page 30.) Though Carlstadt himself was not able to reach any conclusion he shows, even if in a faint form, the beginnings of the critical methods.

VI. It is not necessary to attempt an elaborate proof of the fact that after the creative force and living impulse of the Reformation had done its immediate work, there was a reaction within Protestantism, in favor of a hard dogmatism, which carried with it a very mechanical theory of inspiration. The doctrine of the infallibility of the book was held in such a way as to hinder that kind of study of the book which is the best tribute to its inspiring power and permanent value. The result was to drive outside of the Church work that

ought to have been done within, and instead of being sorry for this the ultra-traditionalist of our own time taunts his more progressive brother with being a lineal descendant of the heretics and infidels of the eighteenth century.

"While systematic theology, separated from its natural counterpoise the study of the texts, shut itself up more and more in a narrow conventional dogmatism in which the official authority of the Church was substituted for the immediate living action of the Scripture, Biblical Criticism repudiated by the defenders of the Bible fell into hands little fitted to turn it to the best account." (Westphal, VII.)

VII. The Modern Movement.

Stated very briefly and roughly the "Documentary Theory" means that we must take the first six books of the Old Testament and join them together, ignoring all divisions of books, chapters and verses, and that afterwards, this mass of material can be divided, on scientific principles, into four books and these four books can be correlated with four different periods of the nation's life. This on the face of it seems to be a simple process and to those who know anything about ancient literary methods not at all improbable. (See O. H., vol. I, *The Treatment of Sacred Documents*.) But our present purpose is to show the slow growth of this theory, the several stages through which it has passed, the accidents that have befallen it and the opposition it has encountered, in other words the painful processes which, here as elsewhere, have been the condition of progress. At present it is, in its main lines, accepted to the extent that it is used by the two great Bible Dictionaries that have just been published, a new Hebrew Lexicon which recognizes these books is approaching completion, the most recent histories of the Hebrew people are based upon it, and all the critical work done in other parts of the Old Testament is influenced by it. This of course does not prove its truth; that can only be proved by its harmony with the facts that have to be explained. But it shows that things have gone so far in scholarly circles, that all who profess to take an intelligent interest in the Old Testament literature and the life of the ancient Hebrew people should make an effort to grasp the significance of the new view. If the whole thing is "a delusion and a snare" then fate is ironical as well as unkind, and one is in danger of losing faith in science, and of questioning the possibility of any progress. Those who desire a "demonstration" of that gloomy view may turn to a portly volume of 583 pages by the late Dr. W. H. Green, of Princeton, entitled "*The Unity of Genesis*," and to other works by the same author. There he will learn that the difficulties that have puzzled students of all countries and periods are easily settled if you are only willing to have

them settled. "The so-called anachronisms have been examined and nothing has been found to militate against it being the work of Moses." (Page 572.) In a great many cases he will find that the difficulty is no real difficulty but when properly considered a proof of the Mosaic authorship. "Instead of indicating an anachronism, the form of expression thus points to Moses as its author." (Page 429 on the phrase "before there reigned any king over the children of Israel.") It is only fair to the general reader to mention this, but we do not enter into any sustained controversy as exposition not argument is our present aim. There is then very large agreement as to the existence of these different documents, and the controversy concerning their dates is less keen than before. On this latter point however note must be taken of the qualifications and modifications given towards the close of the present essay.

The four books then are, I, the Yahwist (or Jahvist) ; as a specimen of its style and contents, read Gen. II, 4b-III.

II. The Elohist. The first fourteen verses of Gen. XXII contain one of the most picturesque pieces of narrative that we owe to this writer.

III. The Deuteronomist. Deut. XII-XXVI, &c.

IV. The Priestly Code or Priestly Writer. Gen. I-II, 4a, is the introduction to this document which contains the Levitical legislation. The first document is designated by the letter J., the second by E., the third by D, and the fourth by P or PC. When the first two are referred to as a combined document the symbol JE is used. These are the names now commonly in use but there have been changes in the names during the process of this long discussion, extending over a century and a half. For example the Priestly Writer uses the name Elohim for God and his document was originally called the Elohist, afterwards it was named the Grundschrift or fundamental document, then on the discovery of another document using the same divine name it was designated, by way of distinction the first Elohist, and only in the final stages of inquiry did it receive the appropriate title Priestly Code (P C or simply P). The following passage from the Oxford Hexateuch sums up the present situation briefly and correctly :

"From this time, 'the Grafians,' as they were sometimes contemptuously called, began slowly to increase in number and in 1876 their little band received the powerful support of Wellhausen, whose brilliant series of articles on the composition of the Hexateuch at once awoke the attention of Germany. These were followed in 1878 by the first volume of a *History of Israel*, which contained a searching examination of the entire tradition of the cultus, involving a compar-

ison of the Pentateuchal codes with the historical records. These two works with the elaborate treatise on the Hexateuch issued by Kuenen in 1885, have formed the basis of all subsequent exposition for their school, while the great series of commentaries of Dillmann represent the modifications which have been found needful by the continuators of the current hypothesis of fifty years ago.* By his admirable lectures on "The Old Testament in the Jewish Church," the late Prof. W. Robertson Smith familiarized the results of Kuenen and Wellhausen for English readers; this view lay at the back of his profound researches into the origin of Semitic institutions, and by his influence it was adopted as the general foundation for the treatment of the Old Testament in the last edition of the *Encyclopedia Britannica*. To it, also, Prof. Driver has given his weighty support; and his eminent American colleagues in the preparation of the new edition of the Hebrew Lexicon of Gesenius, Prof. C. H. Briggs and Prof. Francis Brown have incorporated it in their work. A crowd of scholars in Germany, Holland, France, Great Britain and the United States are ranged side by side in its defence. No other critical hypothesis has won so large a variety of adhesions in so short a time. It may be safely said at present to command the field. On what grounds does it rest? The answer is twofold, (1) on a comparison of the documents with each other, and (2) on a comparison of the documents with history. The first yields the order JE, D and P; the second leads to the negative result that D was unknown before the seventh century, and P not in existence in its present form before the Exile; while positively it connects D with a promulgation of sacred law under Josiah in 622, and P with a similar promulgation of Ezra, the date commonly assigned being 444 B.C." (O.H., page 69.)

Our next task is to bring the history up to the period mentioned in this paragraph as "this time," and then briefly to note more recent developments. Where then shall we begin our history of the last stage in this long journey, or in other words with what person or period shall we mark the beginning of the strictly modern movement? Dr. G. A. Smith, in "Modern Criticism and the preaching of the Old Testament," gives us a brief but suggestive sketch of this movement in order to rebut the charge "that the modern criticism of the Old Testament is a movement of recent growth, and that its results are, therefore, precarious." He says: "The modern criticism of the Old Testament may be said to have begun in 1680. In that year a French priest called Simon drew attention to the fact that within the book of Genesis the same event is often described in different words." (Page 33.)

*The Supplementary Hypothesis.

Mr. Addis says: "In one sense Simon is far less bold than Spinoza. He does not impugn the Mosaic authorship of the Pentateuch as a whole, though he admits that particular verses must be of much later date. He prefers, with the Jesuit Bonfrere, to think that additions have been made rather than to be always passing off Moses as a prophet. But the point to be observed is that Simon, unlike Spinoza, shows a genuine faculty for criticism. He refers to the endless repetition of the same thing in different words, to the fact that Genesis gives two independent accounts of the creation and mingles together two stories of the flood. He argues from difference of style to difference of authors. In fact, Simon is rightly called the father of Old Testament criticism, and in him we see the pre-critical passing into the critical stage of opinion on the Hexateuch" (vol. I, page XX). I do not wish to depreciate the work of Richard Simon, or to minimize its importance, but we have so far studied the subject in vain if we do not see how difficult it is to mark an exact point of transition, while seeking to do justice to all the different workers in this field. Simon was a great philologist but it may be questioned whether he is sufficiently original to mark an epoch in criticism, but there is one thing that cannot be denied, namely, that he is very closely related to his predecessors both on the positive and negative side. This may be illustrated very briefly; on the one side he was stimulated by "the drastic criticisms" of Spinoza, and on the other he was indebted to Masius and others of his predecessors.

Andreas Masius was a Belgian Roman Catholic scholar of great distinction, who published a commentary on Joshua in 1574, rejecting the Mosaic authorship of the Pentateuch in its present form. In dealing with the authorship of the book of Joshua he uses the following argument which was afterwards reproduced and accepted by Le Clerc: The author of Joshua quotes (X, 13) a part of a poem which celebrates a famous battle, and he says, "Is it not written in the book of the Upright (Jasher)?" We must therefore admit (1) the event, (2) the composition of the poem, (3) the insertion of this in the book of the Upright, (4) the composition of the book of Joshua, in which we read the quotation from the book of the Upright. But the book of the Upright is also quoted from in 2 Samuel 1, 18, with reference to a song composed by David. Consequently the book of Joshua, as we now have it, having been written after that of the Upright, the author must have lived at the earliest in the reign of David. (Westphal, page 51.) This kind of criticism certainly looks modern enough. As a matter of course the book was fiercely attacked and placed on the index. Pererius, the Spanish Jesuit, adopted and developed the views of Masius and his book was serviceable to

Richard Simon, "because," as that scholar himself says, "it resolves judiciously the questions that it proposes and it clears up some of the great difficulties which we meet in the Scriptures." Hence Westphal is led to say "Completely eclipsed by his namesake, the Calvinist gentleman Pererius, he deserves not to be forgotten." By the by, this "Calvinist gentleman," Pererius (1655), is worthy of a passing note; he published such ideas as the following: The creation of man and the appearance of Adam are not two simultaneous facts. Adam, much later than the creation of mankind, is the father of the Jews only, and the Egyptians, Chaldeans, Chinese, &c., were in existence before him. The deluge only submerged Judea, &c., &c. This Pererius was arrested at Brussels and taken to Rome where he abjured his "detestable errors" and his Calvinistic faith. The gentle reader can imagine the tragedy that lies behind that brief statement. Would that this were the only tragedy, but we meet with many such in the course of this special history; the Higher Criticism, which some shallow people regard as a "fad" has had its martyrs; the workers in this field have suffered nobly in the great battle for freedom. We need not then be surprised that the historian Westphal is driven to say: "I do not think we find in this period a single work containing the idea received with gratitude and admiration by modern criticism which did not bring upon the author the anathemas of his contemporaries." And he adds, "The horror that the name of Baruch de Spinoza still inspires in certain quarters, would suffice to throw complete discredit on his Biblical studies and cause them to be regarded as pure profanations." The philosopher himself tells us: There is not a single one of my opinions on the Scriptures which is not the fruit of long meditation, and, although, from my childhood I have been accustomed to the common views that are held respecting the sacred writings, I have not been able to hinder myself from being led to those I now profess." Spinoza finds everywhere marks of compilation and evidences of late date. The following passages from Professor Driver places in strong relief a specimen of the difficulties that have always troubled those who have carefully examined the sacred records; "We all remember the scene, Genesis XXVII, in which Isaac, in extreme old age, blesses his sons; we picture him as lying on his death-bed. Do we, however, all realize that, according to the chronology of the book of Genesis, he must have been lying on his death-bed for eighty years (cf. XXV, 26, XXVI, 34, XXXV 34)? Yet we can only diminish this period by extending proportionately the interval between Esau marrying his Hittite wives (XXVI, 34). and Rebekah's suggesting to Isaac to send Jacob away lest he should follow his brother's example (XXVII, 46), which, from the nature

of the case, will not admit of any but a slight extension. Keil, however, does so extend it, reducing the period of Isaac's final sickness to forty-three years, and is conscious of no incongruity in supposing that Rebekah, thirty-seven years after Esau had taken his Hittite wives, should express her fear that Jacob, then aged seventy-seven, will do the same." (Contemporary Review, LVII, 221). However, beyond noting puzzles of this particular kind, Spinoza had proposals to make which showed that, while influenced by the legends of the Synagogue, he knew how to attack the historical problem in an independent fashion.

Spinoza's *Tractatus theologico-politicus* was published in 1670. He goes upon the scientific principle of attempting to explain the book not by tradition but from itself. He shows that the Pentateuch is a collection of various documents. His positive ideas such as the prominence given to the work of Ezra, and the priority of Deuteronomy to other parts of the "Mosaic" law have in them a glimmering of truth but are not sufficiently specific.

"It is easily seen what important progress is made in these investigations. Spinoza developed the negative evidence with remarkable precaution and completeness, and if his positive positions do not give in detail any tenable representation of the origin of the Hexateuch, yet he has the merit of having introduced the literary historical manner of posing the question." (Holzinger, page 37.)

P. D. Huet, Bishop of Avranches, answered Spinoza with weak arguments and violent language, but stern justice was quickly meted out to him by one of his own order. Father Frassen, a priest of the Sorbonne, attacked him because he had admitted additions by Ezra, and maintained that the Bishop had come too near the opinions of the heretic even while refuting them.

This brings us to the really important work of Richard Simon (1678). His purpose was twofold; (1) to defend the Bible against Spinoza; (2) to defend tradition against the Protestants by showing that the Scriptures alone form a basis too uncertain to serve as a foundation for the faith. His work was elaborate and critical; he examines with great patience the diversities in the narratives; in fact, he is driven to the same conclusion as Spinoza that the five books cannot have a common origin. When he feels himself going too far he says: "It is appropriate to keep silence on this subject and keep to the general reasons which we have stated rather than go deeper into this matter, and wish to condemn by an injudicious criticism what we do not understand."

L'Histoire critique du V. T., by Richard Simon, Dieppe, is divided into three books. Westphal gives the following summary: 1.

Hebrew text of the Bible from Moses to our own time. 2. The principal versions of the Bible. 3. Methods of translating well; obscurities of the Scripture; criticism of the principal authors who have written on the Bible. Of the three parts the first alone concerns the Pentateuch directly. The second is quite philological; in the third a work of erudition and bibliography, the author parades his great learning.

As it has recently again become fashionable in certain quarters to cry out, that now more than ever we are, by the effect of the Higher Criticism, thrown back upon the authority of the Church, it may be well to note that this argument, whatever may be its value, is by no means new. Here it is, as stated by Simon more than a century ago: "The changes which have come over the copies of the Bible, since the first originals were lost, destroy entirely the principle of the Protestants who consult only these same copies in the manner that we have them to-day. If the truth of religion had not remained in the Church, there would be no certainty in seeking it now in the lessons which have been subject to so many changes and which have been dependent in so many things on the will of the copyists." To the book Protestants replied with arguments, to the effect that the writer had undermined tradition while professing to defend it; and the authorities of Simon's own Church chose the policy of speedy repression.

Holzinger speaks of Simon's book as an epoch-making work, and after pointing out its twofold aim in defending the authority of Scripture against Spinoza, and the principle of tradition against the exclusive appeal to Scripture of the Protestants, he goes on to show that, as to the Pentateuch he had to surrender the Mosaic origin, and the unity of its composition, and as to his positive theory of continuous public records kept by the prophets it can be found in Josephus (*Contra Ap.* I, 6, 2,) and had been developed by the Spanish Abrabanel (1509). According to Westphal, Simon owed many of his ingenious thoughts to this Rabbi, a man who in his day was a great financier, statesman, and champion of freedom in the face of the terrible power of the Inquisition.

Simon's book was seized at the printer's, and out of thirteen hundred copies only six or seven were saved. Renan speaking of Bossuet's part in this business, says: "The rage of the rhetorician against the investigator who was about to spoil his fine phrases burst forth like thunder. Narrow-minded, an enemy of the education which annoyed the partisan feeling, full of the foolish pretension that the French mind can make up for lack of science by talent, indifferent to positive research and the progress of criticism, Bossuet, in matters

of Biblical learning, never went beyond his Sorbonne note-books." The ecclesiastical action might be unreasonable, but it was certainly effective; it succeeded in crushing Biblical studies in France, and its influence was felt for a considerable period. We need not linger over the work of the Dutchman, Le Clerc, who in correcting Simon, carried the critical process a step farther; this theologian retracted his opinions but he did not answer his own arguments. Sufficient work had been done to show the need of some positive theory which would explain the literature and reconstruct the history. The difficulties were keenly felt, and there were many suggestions, but the work was by the nature of the case extremely slow. The late Dr. Green, of Princeton, to show that almost any composition can be dissected, once presented an analysis of the parable of the prodigal son into two stories, but, seeing that no one has ever been troubled with any difficulties about the beautiful parable, such an exercise was useless, not to say impertinent. Sufficient has been said to show that a hundred and fifty years ago keen-minded scholars were fully possessed of the fact that there was a literary problem of great difficulty and of high importance.

THE DISCOVERY OF THE CLUE.

In 1753 Jean Astruc, a French Physician, published anonymously at Brussels, a small book entitled "*Conjectures sur les memoires originaux dont il paroît que Moyse s'est servi pour composer le livre de la Genese.*" Others had seen that the repetitions and contradictions were due to the dovetailing together of different documents; but what was wanted was a clue to the analysis of these documents. This Astruc believed he had found in the alternation of the names "God" and "Jehovah." Tertullian had explained this long before in characteristic fashion; but the point was now to gain new meaning and importance. The ancient apologist, Tertullian, tells us that "God is at first called God (Elohim)—which he always was—but He has no sooner created the world, and above all man himself, who alone ought to know his Lord, than he surnames himself Lord (Jehovah) and the Lord took man, &c. From that moment, God, who was only God, became Lord since he had a domain of which he was master." (See reff. in Westphal, page 104.)

The position of the modern apologist is partly represented by the following passage: "As Elohim is the term by which God is denoted in his relation to the world at large, in distinction from his special relation to his own people, it is a matter of course that the creation of heaven and earth and all that they contain is ascribed to him as Elohim (Gen. I). It is equally natural that when the world.

which he had made very good, had become so corrupt as to frustrate the end of its creation, the Creator, Elohim, should interfere to arrest this degeneracy by a flood, and should at the same time devise measures to preserve the various species of living things in order to replenish the earth once more (VI, 2,—IX, 17). Here, too, was a case for Jehovah's interference likewise to preserve this plan of grace and salvation from utter failure by sweeping away the corrupt mass and preserving pious Noah and his family from its contamination and its ruin. Hence, while in the description of this catastrophe Elohim predominates, Jehovah is introduced wherever this special feature is particularly alluded to (VI. 1-8; VII, 1-5, 16b; VIII, 20-22). And Jehovah interferes again to avert the new peril involved in the impious attempt at Babel (XI. 1-9); and he is not unobservant of the ambitious designs of the kingdom erected there (X, 8-10)." (The Unity of the Book of Genesis, page 544.)

Astruc could not believe that the names were used capriciously and regarded the facts as irreconcilable with the theory that Moses was the original author of Genesis. Still, it is well to remember that his work was apologetic in its aim, and that he used his theory to meet objections against the Mosaic authorship. *His procedure, however, gave prominence to the structure of the book, and the question of authorship became secondary.* He first gives proof of the want of unity in the book, and then arranges the contents of Genesis in different columns, according to the clue. His division of the early part of Genesis is very similar to that which is now generally accepted by the great body of critics. We may sum up by saying that his critical work, so far as it goes, and considering the time, was good, but his apologetic was feeble. Those who to-day pour scorn upon, and circulate slanders concerning Astruc would do well to remember that his aim was primarily apologetic.

Eichhorn, a distinguished German theologian, a disciple of Herder, who knew Astruc only at second-hand, worked along the same line, but with more detailed scholarship, and pointed out other differences in language and style between the documents. It is to this scholar that we owe the term "Higher Criticism," of which he says, "a new name to no Humanist" (Oxford "Hexateuch," I, 42). He does not exaggerate when he says: "For the discovery of the inner constitution of the first book of Moses, party spirit will perhaps for a couple of decades snort at the Higher Criticism, instead of rewarding it with the thanks that are due to it" (1780). He cannot fix the dates, but believes that Moses used these two documents, and that they drew from written traditions. The fate of Astruc's book and the influence of Eichhorn on the new point of departure are interest-

ing and important events, therefore we place two brief statements side by side.

"The book of the *"Conjectures"* neglected in France and scouted in Germany by Jerusalem would have kept company on the bookshelves of the libraries with the works 'curious without being dangerous' in the number of which Dr. Lorry had already placed it, and Astruc's hypothesis would have died at its birth if the influence of a theologian of high rank had not caused it to come victorious through the critical period into which every new idea enters immediately after it has provoked the first feelings of astonishment."

"By a strange turn of things, it was in the University of Göttingen even in the circles of the disciples of Michaelis, that Astruc found his prophet. Let us be clear, the intention of Jean Gottfried Eichhorn was in no way to work for Astruc's glory. He appears on the contrary to have carefully avoided it for he scarcely mentions the author of the *"Conjectures"* once in the course of the three volumes. and then it is in the lean company of J. J. Schultens and Jerusalem. He admits that Astruc had deeper views than the latter, but he makes haste to add that his own discoveries have been made quite independently, and that he has refrained from yielding 'to the errors of Astruc.'" (Westphal, p. 118.)

"Astruc's book found no favour in France. In Germany its reception was at first unfavourable. J. D. Michaelis, whose copy of the *'Conjectures'* is now in the possession of the Tuebingen Library, treated it in high-handed fashion, and J. F. W. Jerusalem handled it still more maliciously. That Astruc's discovery did its work is due to the service, of course unintentional, of Johann Gottfried Eichhorn. It was in no way Eichhorn's intention to spread Astruc's glory. Westphal indeed has undertaken to prove that Eichhorn had not read the *'Conjectures'* but knew them only through Michaelis and Jerusalem. But at all events Eichhorn is in the right when he emphasises his independence of Astruc. He did his work again in a much more perfect manner, and divided Genesis as well as Ex. I, II, between the Elohist (P) and Jehovist (JE), supposing that besides these two there were a few later additions. Further, he was not content with the mere division of sources, but also gave a characterization of the literary style, contents and spirit of the sources, and in this regard made observations which are acknowledged up to this day." (Holzinger, p. 42.)

Another remarkable incident is that Karl David Ilgen (*"The Original Documents of the Temple Archives of Jerusalem in their Primitive Form,"* Halle, 1798), a German schoolmaster, taking up the work at this point, made a discovery that was not appreciated and

appropriated until a half a century later. That is, he detected the document then called the Second Elohist (now the Elohist), which was rediscovered, or more fully vindicated, by Hupfeld fifty years afterwards. He was the first to discover that the Elohist (that is, the document now called the Priestly Code), in Genesis always begins his recital with the phrase "These are the generations," &c., and a number of other points which are now generally recognized. His discussion of Genesis was a fine piece of analytical work.

THE FRAGMENT HYPOTHESIS.

Next we meet what is called the "Fragmentary Hypothesis." In the light of the history of the whole movement we see that criticism now took an unfortunate turn; being young and feeble, it was at this stage easily drawn from the right track. This, to use Westphal's phrase, is the hypothesis of men who cannot see the wood for trees. It originated with a Scotchman, Geddes, a Roman Catholic priest, who received the censure both of Protestants and Catholics for his audacity; it was introduced into Germany by Vater, and for a time exercised a powerful influence. This theory emphasizes the diversity and refuses to recognize any real unity, though it admits the fragments are in two groups—the Elohist and the Jehovistic. Those who worked under this idea made an advance in one important point: they carried the analysis into other books of the Pentateuch, though with the hopeless conclusion that this is a multitude of fragments, great and small, independent of one another, often contradictory and with no connecting-link except the thought of the compiler (1802). Opinions differ as to the merits of this theory. One eulogist of Vater declares that he has given to science a fact with which it must always reckon, and in a sense as we shall see that is quite true; another said this way of putting the matter is a great advance on Astruc's hypothesis. "If these scholars had been better instructed as to the labours of Ilgen, which they pass over in complete silence, they would not have credited the Geddes-Vater hypothesis with having rid the criticism of the Pentateuch of the apologetic pre-occupation, according to which Moses alone could be the author of the Pentateuch. Doubtless Vater's work is more extensive than that of his predecessor, since he was the first to attempt to apply Astruc's methods to the other books of the Pentateuch. But apart from this toil, which was after all only a work of patience, there is nothing in Vater's work which allows us to conclude that a new station has been passed in the march towards the truth." (Westphal.)

We must admit that for the time being the effect was disastrous. The undue emphasis on fragmentariness led to the bold assertion of unity with regard to one of the great documents, this in turn gave

rise to the supplementary theory which by its very form prejudged the question of dates. In the light of to-day we can use the words of Holzinger. "Yet if we concede all these evil consequences we must say, notwithstanding, that the Fragment-hypothesis contains a true factor, namely that the chief sources are not from one moulding, and in the most recent criticism it is indeed justified to this extent, that, even as Astruc already says, there are fragments."

The work of Vater awakened the interest of De Wette, then a young man of twenty-five (1806), and he published a remarkable little book—"Contributions to the Introduction of the Old Testament"—in which he opened up a new line of inquiry and started the investigation of the religious institutions of the Pentateuch. The main strength of this work lay on the historical side, but he was hampered by the confused state of the literary criticism. He started many lines of investigation which have been fully developed since, and fixed the period of the book of Deuteronomy as the latter part of the seventh century B.C., a result which the majority of critics still accept. There was at that period a great variety of discussion and some brilliant writing—e.g., that of Ewald—but when it is reviewed now, the lesson is clear that before historical questions could be satisfactorily settled the literary problem must receive a fuller and better solution.

The work of these two men—De Wette and Ewald—was so varied and important that we cannot in our brief space attempt a summary of it. Both were men of great ability and powerful influence. They represent two opposite schools. Ewald was one of the chief representatives of the positive criticism which arose in opposition to the extreme negative conclusions of De Wette. Ewald, the great historian and sympathetic interpreter of the prophets was a man of poetic genius and oratorical power, his influence was great in the English speaking world through his books, and in Scotland through the work of the late Dr. A. B. Davidson. (See statement in Dr. G. A. Smith's life of Drummond.)

Westphal's estimate of Ewald is given strictly from the point of view of help rendered to the clear and logical development of the Documentary Theory. "From all his books written with zeal and for the good cause but without discernment there remains only the memory of an heroic fruitless effort. It is not enough in order to be right to combat an adversary who is wrong. He who wishes to prove all proves nothing." (Page 164.) But Wellhausen admits that "The youthful De Wette and his followers had really gone too far in applying the same measure to all parts of the Pentateuch, and had been satisfied with a very inadequate insight into its composition and the

relation of its parts. Historical criticism had hurried on too fast and literary criticism had now to overtake it." (Encycl. Brit.)

THE SUPPLEMENTARY OR COMPLEMENTARY HYPOTHESIS.

The fragment hypothesis had to give way before the demonstration that the Pentateuch is not a mere collection of independent pieces, but shows signs of design, and has a well-defined plan. One thing came out of Ewald's brilliant apologetic, namely, the plan of Genesis; and in answer to the question, Why is it so difficult to disengage the old monuments from the debris? this theory explained that the complexity of the problem resulted from the activity of the editor, who was not a mere compiler. Thus an attempt was made to account both for the unity and the diversity. The great idea of the complementary hypothesis is the theory that the first Elohist—now called the Priestly Code and regarded as the latest document—was the Grundschrift or fundamental document. There was a strong tendency to glorify this document and reduce the others to supplementary fragments. In this ragged condition they still betray a common origin, hence Bleek had the luminous thought of attributing them to the redactor. Of the supplementary hypothesis it has been well said: "Born of contradictory principles, it exhausted itself in trying to conciliate them. It could only establish itself by suppressing the Jehovist, and in suppressing the Jehovist it took away all chance of its own life." (Westphal, page 199.) But the detailed work of these years of strife was not to be all lost; very much of it was to be of great service when criticism had returned to its proper course.

Hupfeld, who rediscovered the second Elohist, was not well read in the literature of the subject, and he is said to have been annoyed by the discovery that Ilgen had been over the ground before him. Hupfeld, however, not merely discovered that one document; he reconstituted and vindicated the three, and on his basis critics have very largely proceeded in their analysis (1853). Noldeke showed that the second Elohist is preserved only in extracts embodied in the Jehovistic book, so that J and E form one whole and the Grundschrift another.

Twenty years before this "two Hegelian writers, Vatke and George, moving on lines apart from the beaten track of criticism, had actually effected the solution of the most important problem in the whole sphere of Old Testament study." (Wellhausen.) That is, they were the first to attack with sound method the question of the historical sequence of the several stages of the law, but their work could not receive its due recognition until the literary problems had been more fully investigated. Speaking of Vatke, Smend says, (*Lehrbuch der Alttestamentlichen Religions-geschichte*, page 3),

"The Hegelian dialectic fitted him in an extraordinary measure for the analysis and comprehension of the Biblical circle of ideas and the Hegelian philosophy of history carried him beyond the limits which rationalism imposed upon its disciples for the understanding of Biblical religion. He comprehended the history of Old Testament religion not merely as a logical process in which every individual phenomenon has its necessary place, he recognized the movement in its living reality with comprehensive interest in the facts, and profound knowledge of the Old Testament literature. He shows that the history of Israel's religion was throughout conditioned by the circumstances of the people, and with great keenness of vision he judged accordingly the particular literary and historical problems. He was the first to discover that the Law as such had its historical place after and not before prophecy. Hence he taught that three great periods are to be distinguished in which the Old Testament religion has run its course—pre-prophetic, prophetic and post-prophetic time—a view which effects not only the comprehension of the whole but also that of all the more important details," &c. (Cf. The propositions of Reuss quoted by Wellhausen, *Encycl. Brit.*).

A generation later K. H. Graf (*Die geschichtlichen Buecher des A. T.*, 1866) attacked the problem on the historical side and showed that the legislation, from the middle books of the Pentateuch, arose from exilic and post-exilic times. The document containing this legislation was at that time regarded as an early document, the original framework of the Pentateuch; the result of Graf's historical investigation was to show that the legislative part of the document, at least, must be late, but when he was face to face with the demonstration of the unity of the document he was compelled to move either forward or backward.

The supplementary hypothesis so far influenced Graf that at first he had to tear the Priestly Code in two, making the historical part very early and the legal part very late. In this, as Wellhausen points out, he was allowing himself to be fettered by bonds that literary criticism had already loosened. When he perceived this, he saw that the whole document (P) was late and the Documentary Theory took substantially the form that it now holds. "Graf himself did not live to see the victory of his cause. His *Gocl.* to speak with the ancient Hebrew, was Professor A. Kuenen, of Leyden who has had the chief share in the task of developing and enforcing the hypothesis of Graf." (Wellhausen.) It is, however, only fair to say that Wellhausen himself had an equal, if not larger, share in this important work. During the last thirty years there have been many workers in this important field as well as many able mediators and popular-

izers, and the hypothesis that the Hexateuch consists of four main strata of documents which can be correlated with distinct periods of the life of Israel is established by proofs valid and cumulative. We cannot now expound the theory fully, or exhibit the proofs; our aim is simply to show that it is not a new conceit that has been hastily adopted, but a scientific process that has had a long and very gradual growth. As in all such movements, one point at a time has had to be worked out with care and patience. The solution of the chief problem reached by many lines of investigation prepares the way for further research in all departments of Old Testament study.

SUMMARY OF RESULTS.

1. The evidence shows that the Documentary Theory is not the result of a persistent, widespread international conspiracy which by an exercise of perverse ingenuity has succeeded in calling into existence a series of imaginary documents, but rather a slow logical development which owes its origin to the pressure of facts in Hebrew history and literature which are both numerous and significant.

2. The specific suggestion which led to the formation of the dominant theory was given in a book which attempted to show how Moses could have written the Pentateuch by using earlier documents. This suggestion was that the use of the different names for "God" might serve as a guide in separating these documents.

3. This suggestion was found to be fruitful, and in applying it other criteria, linguistic, historical and theological, were discovered which revealed the peculiar character of the documents already separated by means of the first clue.

4. At an early stage, a third document was discovered in Genesis, by a scholar whose work was at first neglected or very slightly appreciated.

5. This particular style of investigation received a check through the work of certain scholars who laid too much stress on the idea of the diversity and divergences within the documents, thus reducing them to mere fragments.

6. The form in which the unity of the documents was vindicated by critics and apologists introduced a bias as to the dates which had an unfortunate influence and in some cases caused considerable confusion.

7. The recognition that Deuteronomy was a document of the 7th century, B.C., formed a fixed point which has held its place for a century, and is of great importance for the critical discussion of the history and literature.

8. The re-discovery of the third document (the second Elohist, now called simply the Elohist), completed the series of four docu-

ments and allowed the strength of discussion to pass over from the question of structure to that of dates.

9. In the final stage of this discussion, when the question is discussed from the historical side, we see the influence (a) of the bias introduced by the supplementary theory, and (b) of the evident unity of a document. For example, Graf shows that the institutions (the Levitical institutions) in the Priestly Code must be late, and the legal part of the document in its present form late. But according to the theory then prevailing this was the original document. He attempts to solve the problem by cutting the document into two parts, one historical and the other legal. Against that attempt the unity of the document opposes a strong hindrance and Graf is compelled to treat it altogether as a late document, a position which has since been strengthened by a great variety of arguments. Hence we reach the order already indicated of four Documents in the Hexateuch. Two early books of history, the Yahwist and Elohist, two distinct strands yet so closely woven together in many places that it is difficult to separate them. One popular book which bases its lessons upon the earlier history, and expands or modifies earlier laws—Deuteronomy. One book mainly concerned with ritual but also containing a slight historical framework which is carried back to the beginning of the world—the Priestly Code.

FURTHER DEVELOPMENTS.

(1) When once the main strata have been marked out with some approach to definiteness, then justice can be done to the suggestion that the ancient documents contained fragments and supplements, without causing the confusion that resulted when these secondary facts were treated as of chief importance. It is of course a complex affair when one is dealing with a body of laws and literature belonging to several centuries and growing out of great national movements. Hence, while the lessons to be learned from the history of this particular department of criticism is that it was not possible to make any real progress until this idea of different literary strata belonging to succeeding periods was accepted, now further analysis can be attempted and needful modifications introduced. J. E. D. and P. may then be regarded as representing schools rather than merely individual writers, and within the later documents much early material may be discovered. In this detailed and difficult part of the investigation there must, of course, be some speculation that is tentative and uncertain, but many sections have been made the subject of special inquiry with fairly satisfactory results. Thus it is a serious mistake to suppose that critics bring down the date of all this literature to a late period in the history of the Hebrew people. The out-

line of Kautzsch is fairly representative of this school; the following important dates are taken from it: The song of Deborah about 1250 B.C.; Jotham's fable a little later—some poems and stories in the Pentateuch no doubt belong also to these early days—David's lament over Saul and Jonathan, about 1000 B.C.; Jacob's Blessing, Gen. XLIX; The Book of the Upright, Josh. X, 12; the original form of the Balaam oracles, Numb. IV, 23, about 950; the fundamental form of the Book of the Covenant, Ex. XXI-XXIII, about 880; the Yahwist history (J), about 850; the Elohist history in the first half of the eighth century; the original of Deuteronomy (D), from 650-628; the Priestly Code, about 500 B.C. The final redaction bringing the four documents into their present form took place about a century later.

Two or three writers whose works have attracted attention propound the extreme view that the great body of Hebrew literature had its origin in post-exilic times, but in this they are opposed by the generally accepted results of the higher criticism. Speaking of a Jesuit author who denies the right of Catholics to hold any but the traditional view as to the authorship of the Pentateuch, Abbe Loisy says: "He cites in the same place an epigram of Mr. Maurice Vernes on Mr. Paul Haupt's Polychrome Bible, in which each Biblical document is distinguished by a special colour. If the readers of the *Studies* knew that Mr. Maurice Vernes only poured contempt upon the microscopic work of the documentary criticism in order to bring down the composition of the whole Old Testament to the time of the Persian and Greek domination they would perhaps find that Father Mechin-eau was not sufficiently traditional in his choice of company." (*Etudes Bibliques*, page 101.)

(2.) It is now seen that this solution of the Pentateuch problem is of far-reaching influence, in the domain of Old Testament history and literature; all the other historical books, as well as the prophecies stand related in time and spirit to one or other of these documents. For example, we find in the books of Judges and Samuel histories similar in tone and style to the early documents J and E, so much so indeed that some critics find the continuation of these documents in the early historical books; that, however, is a conclusion not yet generally accepted (See Dr. H. P. Smith's *Critical Commentary on Samuel*, page XXII). Then large sections of the historical books, especially in the book of Kings, are found to be edited in the spirit and style of Deuteronomy, while in the Chronicles (about 300 B.C.), we have the history treated from the standpoint of the Priestly Code. The early prophets do not reveal any acquaintance with the later documents (D & P), while the language of Jeremiah shows a strik-

ing resemblance to Deuteronomy, and Ezekiel in spirit and style has close affinities with the Priestly code. This is one of the most striking of the confirmatory arguments.

(3.) When the date of the final form of a document has been fixed there remain many questions as to the origin of its contents, and the connection between the present form of these and more ancient traditions. Several of the stories in Genesis bear a great resemblance to the stories found in the Babylonian inscriptions. The problem before the scientific student is to account for the two points of similarity and difference, in the light of the most recent research. The latest view seems to the writer most acceptable, namely, that these ancient traditions formed part of the Semitic culture into which the Hebrew people entered after they came into Palestine, that they were gradually purified, and made the vehicle of the noble monotheism and strong ethical teaching which God has given to the world through this favoured people. For the view that Abraham brought from Ur of the Chaldees "a truer account free from mythological conceit transmitted to him in the line of a pious ancestry," see Green's *Unity of the Book of Genesis*, page 123.* A separate essay would be required for the treatment of this subject, so we must conclude with the statement that along this line investigation is now proceeding and many interesting questions are handled from the new standpoint, with good hope of reaching a satisfactory solution. The result we believe will be to make the Old Testament literature more valuable from the point of view of scientific study as well as for the purpose of practical edification.

The sketch here given is slight and imperfect, but the author trusts that it will be sufficient to show that the belief now held by the great body of Old Testament scholars, as to the origin of the Pentateuch, is not an easy conjecture or a random guess, but the result of careful work in which many scholars, working on the same scientific principles, have been able to check or confirm one another. Further he trusts that the outline here furnished may be useful to some who wish to examine the question for themselves. Surely one of the noblest tributes to the worth and influence of the Old Testament is the continuous conscientious work that has been bestowed upon it during the last four centuries.

W. G. JORDAN.

* (See also Ryle's *Early Narratives of Genesis*, the *Commentaries of Dillmann and Gunkel*, *Addis* vol. I, page 2, *Gunkel's Schöpfung und Chaos, Criticism and Archaeology*, by Dr. Cheyne in *O. H.*, vol. I. *The Permanent Religious Value of the O. T.* in *Contentio Veritatis*. *The Old Testament and the New Criticism*, by Dr. J. P. Peters, chap. X. *The Creation Narratives in the Light of Modern Criticism*, *Queen's Quarterly*, vol. VII, No. 4).

THE MEANING OF THE PACIFIC CABLE.

ON the 31st of December, 1900, the contract for the construction of the Pacific cable, was entered into by the Home Government in conjunction with the governments of New South Wales, Victoria, Queensland, New Zealand and Canada. On the 31st of October, 1902, the first submarine messages were exchanged by it. This cable, the only national one in the world, as yet, traversing any ocean, connects Canada and Australasia. Starting from Vancouver Island, which is in direct telegraphic communication, across Canada, and beneath the Atlantic, with the Imperial centre in London, it traverses the Pacific with three mid-ocean stations, the first at Fanning Island, the second at the Fiji Islands, the third at Norfolk Island, where it bifurcates, one branch connecting with New Zealand, the other with the eastern coast of Australia. Thus the principle of state ownership and control of submarine cables, uniting British Colonies with each other and with the Mother-land, is now formally recognized and transformed from a dream into an actual fact. One considerable stretch of the long line round the globe studded with the widely severed portions of the Greater Britain, is effectively supplied with the instrument of communication which annihilates space. The rest will follow. The Pacific cable, it may be hoped, is only the first instalment of a world-embracing, national telegraphic system which will prove to be the sensory and motor nerves, as it were, of the British Empire; uniting all its widely sundered members into a single organism, wherein every part shall be in vital connection with every other part however distant.

A glance at the history of the British postal-service during the reign of Queen Victoria will help to show precisely the point of development at which we have now arrived in our imperial system of inter-communication and to indicate the line of further advance. Three great reforms stand out as marking the stages of our progress hitherto:

1. The adoption of penny postage in the United Kingdom.
2. The adoption of the postal telegraph system in the United Kingdom.
3. The adoption of penny postage throughout the empire.

Just as the first of these reforms has expanded into the third, under the stress of commercial and social needs, and the more vivid consciousness of national unity which has arisen among the component parts of the British Empire, so we may confidently expect that under the same influences the second will develop into a fourth, a

considerable portion of which has now been realized in the Pacific cable, namely the adoption of a postal cable service between all parts of the empire.

The introduction of the penny-postage into the United Kingdom was due, as is well known, to the efforts of Rowland Hill. Before the reign of Queen Victoria the postal service was generally very defective. The rates were most burdensome. The charges on letters varied according to the distance of their transmission—an arrangement full of inconvenience. They were besides excessively high, in some cases more than twenty-fold, and on an average nine times the present rate.

Such was the state of matters when in 1837 Hill's remarkable pamphlet appeared under the title, "Post Office Reform, its Importance and Practicability." The evils of the existing system were clearly exposed and certain radical changes recommended—chief among which was the proposal to reduce the postage to a uniform rate of one penny per letter, without regard to distance within the limits of the United Kingdom. The author did not hesitate to declare that, with this change, there would be at least a five-fold increase in correspondence, and that the cheaper rate would actually in the long run provide more revenue. His proposal was ridiculed as wild and visionary and encountered the honest opposition of many high officials. The post-office, from the Post-Master General down, was unanimous and pronounced in its hostility. Public opinion was, however, so decidedly in favour of his scheme that as early as in 1840 the proposed penny postage came into force. All the sanguine predictions of Rowland Hill were speedily, far more than, realized, in a manner which compelled acknowledgment from all. Six years after the introduction of his reform, a public subscription was raised throughout the country in recognition of his services, and the honour of knighthood was conferred upon him by the Queen. Later he was voted the sum of £20,000 by the House of Commons, on the motion of Lord Palmerston, who pointed out in eloquent terms the benefits which the nation had derived from penny postage. He was not a benefactor to Great Britain alone. In the year 1854, the postal improvements resulting from his initiative had been adopted more or less completely in every civilized country.

In 1897, the year of Her late Majesty's Diamond Jubilee, the British Post-Office gave a new significance to the expression "penny postage" by increasing from one ounce to four ounces the weight for which a penny sufficed to pay the carriage of letters within the United Kingdom. No such letter rate exists in any other country in the world.

A word or two now on the second reform, the adoption of the postal telegraph system. The Queen had not been ten years on the throne, before the marvellous possibilities of electricity, as a medium of human intercourse, were revealed. In 1847 the discovery was turned to practical account. In that year, through the enterprise of private companies, the electric telegraph began to be used for purposes of communication. Telegraph lines were soon afterwards established between many of the principal cities of the United Kingdom, by joint-stock companies. These ventures proved most profitable to the promoters, but in course of time complaints began to be heard of exorbitant charges, of vexatious delays in the transmission of messages, of the inadequate diffusion of telegraphic facilities, which were enjoyed only by the great cities. Suggestions were made on many sides that the Telegraph should be nationalized and attached to the Post-Office. The Chamber of Commerce of Edinburgh, with Sir George Harrison, its convener, for moving spirit, may claim to a large extent the credit of having created a public demand for the transference of the service from private companies to the State. It is interesting to notice that among the arguments insisted upon for this course, apart from the considerations already referred to, great prominence was given to the difficulties imposed by the methods and rates of the companies upon the newspaper press, which had in the interests of the public so strong a claim to special facilities. The agitation finally succeeded. In 1868 an Act was passed to enable the Post-Master General to acquire and work all the electric telegraph lines then existing, or thereafter to be established, and two years later the Postal Telegraph Service came into operation. Under State ownership great benefits have resulted. The former exorbitant charges were at once reduced, at first to a shilling a message, afterwards to sixpence for twelve words. The volume of business swelled enormously. In 1869, the year before the transfer, the number of messages carried was less than seven million. In 1870 the traffic had already increased 50 per cent., and it continued to do so until in the tenth year twenty-nine million messages were transmitted, with a surplus revenue over expenditure of £354,060. In another decade, the total annual business rose to ninety-four millions, the operations still resulting in a surplus of £251,806, although the charge for a message had been meanwhile reduced from one shilling to sixpence. Besides, there is now no town, scarcely a village or even hamlet in the United Kingdom, which does not boast its telegraph office.

The penny postage has recently been extended, from the narrow limits of the British Isles, practically throughout the whole extent of the Empire. This great advance, by the testimony of the Duke of

Norfolk, late Post-Master General of the Home Government, was largely due to the progressive spirit shown by Canada—above all as Mr. Henniker Heaton, member for Canterbury, himself among the earliest and most ardent advocates of the idea, generously insists, by Sir William Mulock. And no doubt imperial penny postage will have far-reaching consequences. It is a great onward movement in the march of civilization, and in the development of wider national sympathy and sentiment. The ideal which hovered before the mind of Professor Seely—the original prophet of the Greater Britain—that a man of British birth should think no more of shifting his quarters from Yorkshire to Ontario than of moving from Yorkshire to Suffolk, is brought appreciably nearer by the fact, that it will cost him no more to send a letter from Ontario to Yorkshire, than it would to communicate with his old home from Suffolk. But great as are the benefits destined to follow the adoption of universal cheap postage, the first result and not the least will be to make plain that a postal service, however cheap and comprehensive, is in itself insufficient for the increasing daily needs of the widely-distributed British people. Just as the penny postage in England was inevitably followed by the Post-Office telegraph, the success of the former inspiring the boldness necessary to the conception of the latter and the improved means of communication stimulating the appetite, which "grew by what it fed on," for still further improvement, so the Imperial Penny Postage cannot fail to be the precursor of the Imperial cable service.

Every single reason which held good for the transference of the land telegraph system within the British Islands from private companies to the State, holds good now for the extension of the same principle to ocean cables, and that in a vastly intensified degree. Cable rates over long distances are at present exorbitant. They are, in fact, prohibitory for social and many ordinary purposes. Yet it is of far more consequence now for a merchant in Melbourne, let us say, to be able to communicate freely by telegraph with London than it was for an Edinburgh merchant in 1869. In the latter case the gain in time was comparatively insignificant; in the former it is enormous—weeks instead of hours. Electricity, it is well known, annihilates distance. With a serviceable cable it would be just as easy to do business with London from Melbourne as from Edinburgh. And, what is not generally known, there is no reason whatever, in the nature of things, why cable-charges should not be quite moderate. The cost, for the companies, of transmitting a message by telegraph, is not determined by the distance. It is true they charge according to distance, but this is simply an expedient for obtaining larger returns. As a matter of fact, there is no more current outlay incurred in trans-

mitting long than in transmitting short distance messages. It may be hitherto unrecognized in practice, it may not agree with preconceived ideas, but it is a fact nevertheless that there is no known means by which communications may be sent at less actual cost than by telegraph. A mail or letter cannot be conveyed by railway or ocean steamer without expenditure on coal, machinery, oil, wages and other things to keep the train or ship in motion. The farther the letter is carried, the more it costs. The expenditure is constant for every hour and continuous for every mile. Not so with the telegraph, which excels in cheapness almost as much as in speed. When it is once established, equipped with instruments and manned by operators, messages may be transmitted for one hundred or one thousand miles not only as speedily, but just as easily and as cheaply, as for one mile. Of course the initial expense of laying a cable is considerable. But so is the initial expense of the railway rolling-stock and ship-construction required for a letter-carrying service. Of course, too, liberal provision would have to be made for wear and tear; the cables might break. But it is also true that a steamer might be wrecked. In that event, too, the chances are that everything may be lost. Modern cables are not very likely to break and if they do they can be repaired at no very great cost. But the expense of laying and maintaining cables would be a mere insignificant bagatelle compared with the incalculable gain to the public resulting from a state-owned ocean telegraph system. The principle of the penny postage, a low uniform charge for all distances, would be once more signally vindicated. Cable rates at first at one shilling, later at sixpence a word, without regard to distance, would undoubtedly produce an enormous expansion of traffic just such as followed the adoption of the postal land-telegraph system in the United Kingdom, and would result in a similar surplus of revenue over expenditure—eventually in such a surplus as would probably warrant a further reduction in rates.

The commercial and social advantages of a postal cable service, and its perfect practicability are thus manifest. No less conspicuous would be the political advantages of the scheme. At an earlier period in the world's history, it would have been difficult to conceive the possibility of any lasting or effective union between the countries which compose the British Empire, countries so widely separated by intervening seas. Already something has been done to neutralize the centrifugal force of distance. It costs no more time and causes less discomfort, now, to travel from Montreal to London than it did to travel thither from Glasgow at the beginning of the nineteenth century. The extremities of the British Empire are better acquainted and in closer touch with one another at present, than Land's End and

John o' Groat's House were then. Swift steamships, cheap postage, and newspapers have brought about this happy result. The process begun has only to be completed and perfected by the further application of principles, which have already been abundantly approved. Much still remains to be done. In Canada, for instance, the English news served out for us comes for the most part through the cables of the New York Associated Press, used by our own press on grounds of economy. The proverbial connection, however, between cheapness and nastiness, often holds good in this case. The news thus obtained has too often been prepared to suit the palates of a large class of readers in the United States, who delight in hearing of what redounds to the disadvantage of England. A just and sympathetic view of the doings of our fellow-subjects in the old land, is not likely to be conveyed to us through such a medium. For this reason alone, if for no other, in the interests of that close mutual acquaintance and understanding which is the ultimate bond of union between fellow-countrymen, it would be well worth while for our governments firstly to own and control cables of their own, and secondly to provide a news service at bare cost. The Edinburgh Chamber of Commerce, as already stated, insisted upon the claims of the press, as the great organ of a common national life, to special telegraphic facilities, and made the impossibility of otherwise doing justice to this claim tell as a weighty argument in favour of transferring the inland telegraph system of the United Kingdom from private companies to the State. The same reasoning holds good for the Greater Britain in a highly potentiated degree. The gain in this case would be not merely one of quantity, in time and amount of news, but one of quality as well.

Other political advantages of the scheme here advocated are so obvious that it is scarcely necessary to point them out. For imperial security, for administrative purposes, the gain would be no less than for the furtherance of commercial and social intercourse, and the increase of mutual understanding and sympathy among the peoples of the British race.

This point may be well illustrated by the telegraphic connection of Australia with the mother country. A few years ago that connection was effected by lines owned by private companies running across parts of Europe, Africa and Asia, which at certain points passed through foreign countries or touched at foreign ports. At many places on their way the cables traversed shallow seas where they could easily be destroyed by an enemy or even by an ill-disposed fisherman. The danger to imperial interests involved in this arrangement was pointed out and used as an argument for a state-owned cable laid with more attention to security; in particular avoiding foreign terri-

tories and the shallow seas adjacent thereto. The companies, whose interests appeared to themselves to be imperilled by the proposed scheme, hastened to anticipate it by laying a new cable precisely on the route which had been projected for the imperial line. Some of the more obvious risks entailed by the old system have, no doubt, been partially removed by this bold course. The end in view, however, imperial security, is very far from being at all adequately attained thereby. If these companies succeed in their designs, and they have left no means untried which seemed calculated to lead to success, they will hold firmly within their grasp the most important telegraph lines of the Empire. A condition of things pregnant with danger! For it must not be forgotten that the privileges and powers of companies are transferable by purchase. We constantly hear of such transfers, in the building up of great financial trusts and combines, and we may well ask ourselves the question: "What would prevent a syndicate of foreign stock-operators buying up the controlling power of the Eastern group of cables? What would prevent the controlling power of the whole telegraph system of the southern hemisphere passing, into foreign hands? What would prevent the Empire's most vital organ of communication being alienated at the most critical moment?" The mere possibility of such a thing cannot be regarded with equanimity. In a collision of interests, private on the one hand, public and imperial on the other, the narrower must give way. It is essential for the safety of the British Empire that permanent security of communication should be obtained. It can be obtained without difficulty in one way and in one way alone, by a trunk system of imperial cables, which might well co-exist with private lines, nay, actually act as a feeder for them! and leave them abundant scope for all reasonable profits.

Surely, in a world which has not yet reached the era of millennial peace, for an empire exposed on so many sides to the risks and losses of war, this single consideration of security alone, apart from all the others which have been already pointed out, would suffice to establish with overwhelming force the desirableness of a state-owned chain of cables connecting all the self-governing British possessions.

To sum up. The commercial, social and political exigencies of the Empire demand with ever increasing urgency a system of imperial telegraphy. The whole course of postal development throughout the Victorian era, points in the same direction. In establishing such a system, we should be merely extending the operation of principles which have already been approved by conspicuous success. A considerable part of the undertaking has already been achieved in the construction of the Pacific cable. Can we doubt that it is sure to

reach full consummation? Can we doubt that not many years will pass before the realization of a Pan-Britannic telegraph service will bring the ends of the earth within speaking distance of each other, and knit all men of British blood, the whole world over, into a national union as effective as now prevails within the British Islands themselves?

That is the obvious meaning of the great undertaking now completed. That is the true purpose of the outcome of a joint arrangement entered into by six British governments on the last day of the century. A partnership unique in history and a date co-incident with the close of the glorious Victorian era. Now we find ourselves the inheritors of an accomplished fact pregnant with beneficent consequences, not for the Empire only, but for humanity generally.

SANDFORD FLEMING.

MR. CECIL RHODES AND HIS SCHOLARS.

THERE has been, I think, a good deal of loose talk and loose writing of late, upon the subject of the Rhodes Oxford scholarships. I say "loose" advisedly, because people seem generally to forget that they are dealing with a Will, and a Will which, as one might expect in the case of a testator of such strength of character and decisive opinions, is carefully framed to carry out the views of Mr. Rhodes, rather than those of his trustees on the one hand, or of the authorities of Oxford University on the other. There is no such wide discretionary power vested in the Trustees as could alone justify some of the speculations of the speakers and writers to whom I refer; and the law of England does not sanction the disregard of the testamentary wishes even of a pious founder, till at all events the lapse of a few centuries will allow it to be done with a certain amount of decency.

I think it may be of interest to refer somewhat specifically to some of the provisions of the Will, not only because they settle, as it seems to me, a good many questions which have been mooted with regard to the Rhodes scholarships, but also because they display a very interesting and rare personality. Anyone who wants to read it at length will find it in the "Times" of April 5th, 1902.

The Will displays, for example, not only a vein of sentiment and a regard for higher education, with which perhaps some would hardly have credited Cecil Rhodes, but also an altruism of a peculiar type, inasmuch as it is often directed neither towards individuals on the one hand, nor to what would be generally considered great public objects on the other, but rather to objects, of a public nature indeed, but of minor importance, with which few men would very earnestly concern themselves. Added to that, we find a strange appreciation of the importance of the externals of life, of doing things in a style worthy of the dignity of the doer, and generally of the spacious life, which often reminds one more of the characteristics of Aristotle's Magnificent Man, perhaps, than of anything else. "For the expenses of the magnificent man ought to be made in the public interest, and not in his own; and in this point a gift has a certain resemblance to an offering to the Gods. The magnificent man will, moreover, equip his house as becomes his wealth, for he thereby adds a certain lustre to his position. . . . Above all, he will always consider what most becomes the particular occasion. . . . And, hence, we can see that whatever the magnificent man undertakes, he will carry it out with a magnificence which suits its kind."

The Will opens with the words:—"I admire the grandeur and loneliness of the Matoppos in Rhodesia, and therefore I desire to be buried in the Matoppos on the hill, which I used to visit, and which I called the "View of the World," in a square to be cut in the rock on the top of the hill, covered with a plain brass plate with these words thereon: "Here lie the remains of Cecil John Rhodes."

Next follow some most interesting provisions upon which, however, I must not dwell, securing the dedication and preservation of the Matoppos Hill as a burial place for all time for those whom the government for the time being shall declare to have "deserved well of his or her country,"—a sort of Westminster Abbey for South Africa;—and of certain landed properties as a model farm for "the instruction of the people of Rhodesia," "in farming, forestry, market, and other gardening, and fruit farming, irrigation, and the teaching of any of those things and the establishing and maintaining an Agricultural college." Then comes a gift of £100,000 "to my old College, Oriel College, in the University of Oxford." Now, everybody who knows Oxford knows that Oriel College is hidden away in the narrow street called Oriel Lane, and entirely concealed from "The High" by a row of shops; and the object of the first portion of the bequest we are considering is declared to be to defray the expense of extending the College buildings to High Street. For the rest, the Will proceeds as follows:—"And inasmuch as I gather that there is a deficiency in the College revenue of some £1,500 per annum, whereby the fellowships are impoverished and the status of the College is lowered, I direct that the sum of £40,000 further part of the said sum of £100,000 shall be held as a fund by the income whereof the income of such of the resident Fellows of the College as work for the honour and dignity of the College shall be increased. And I further direct that the sum of £10,000 further part of the said sum of £100,000 shall be held as a fund by the income whereof the dignity and comfort of the high table may be maintained, by which means, the dignity and comfort of the resident Fellows may be increased."

After then directing that a certain part of the bequest shall be held as a repair fund to provide for maintaining and repairing the College buildings, Mr. Rhodes continues:—"And, finally, as the College authorities live secluded from the world, and so are like children as to commercial matters, I would advise them to consult my trustees as to the investment of these various funds for them, for they would receive great help and assistance from the advice of my trustees in such matters." Thus liberally does Mr. Rhodes display the love which amid all the distractions of a life spent in public affairs and the

accumulation of wealth, he retained to the last for his old College,—

“Blest spot where child-like Learning sits,
Remote from worldly cares,
And leaves to skilled financiers its
Pecuniary affairs.”

Next follows, in the Will, the devise of a property to the trustees, for the purpose of furnishing a residence for the Prime Minister for the time being of the Federal Government of the States of South Africa “befitting the dignity of his position,” and securing an income of not less than £1,000 per annum, to provide two carriage horses, one or more carriages, and sufficient stable servants for such Prime Minister, and two competent men servants for domestic service in said residence.

Then come the all important provisions for the Oxford scholarships, and here let me note at once that the will disposes of the idea which has prevailed in certain quarters, that there is some power in the Trustees to create additional scholarships for the Colonies or donate scholarships to particular educational institutions other than the four South African Colleges mentioned in the Will, to each of which “one scholarship and no more” is donated. One scholarship is given to each of the following colonial possessions, namely :—Natal, New South Wales, Victoria, South Australia, Queensland, Western Australia, Tasmania, New Zealand, Ontario, Quebec, Newfoundland, Bermudas and Jamaica, and in each individual case the testator repeats the words “one and no more.” Rhodesia is to have “three and no more.” There is indeed a clause in the Will, directing the Trustees to establish “additional scholarships,” but this is simply a power to establish American scholarships additional to those given as above mentioned to the several Colonies, namely two scholarships to each of the States and territories of the United States.

I would next call attention to the recitals which precede the provision for the scholarships, which not only are interesting as showing the motives specially influencing Mr. Rhodes, but which taken in connection with certain subsequent clauses relating thereto, to which I shall also call attention, show conclusively that the Rhodes scholars must be content to enter the University of Oxford as undergraduates, and that no system of new post-graduate courses, even if such a system were introduced into Oxford, as has been suggested, could be made applicable to them in their capacity of Rhodes scholars.

The recitals are as follows :—“Whereas I consider that the education of young Colonists at one of the Universities in the United

Kingdom is of great advantage to them for giving breadth to their views, for their instruction in life and manners, and for instilling into their minds the advantage to the Colonies as well as to the United Kingdom of the retention of the unity of the Empire; And whereas in the case of young Colonists studying at a University in the United Kingdom I attach very great importance to the University having a residential system such as is enforced at the Universities of Oxford and Cambridge for without it, those students are at the most critical period of their lives, left without any supervision; And whereas there are at the present time fifty or more students from South Africa studying at the University of Edinburgh, many of whom are attracted there by its excellent Medical School, and I should like to establish some of the scholarships hereinafter mentioned in that University, but owing to its not having such a residential system as aforesaid, I feel obliged to refrain from doing so; And whereas my own University, the University of Oxford, has such a system, and I suggest that it try and extend its scope, so as if possible to make its Medical School at least as good as that of the University of Edinburgh; And whereas I also desire to encourage and foster an appreciation of the advantages which I implicitly believe will result from the union of the English speaking peoples throughout the world, and to encourage in the students from the United States of North America, who will benefit from the American scholarships to be established for the reason above given at the University of Oxford under this my Will, an attachment to the country from which they have sprung, but I hope without drawing them or their sympathies from the land of their adoption or birth, Now therefore," etc.

Then follows the gift of the scholarships, each of which is to be the value of £300, and tenable for three years.

Next are the very interesting provisions as to the principles on which the scholars are to be selected:—

"My desire being that the students who shall be elected to the scholarships shall not be merely bookworms, I direct that in the election of a student to a scholarship regard shall be had to:—

- (1) His literary and scholastic attainments.
- (2) His fondness and success in manly outdoor sports such as cricket, football and the like.
- (3) His qualities of manhood, truth, courage, devotion to duty and sympathy for the protection of the weak, kindness, unselfishness and fellowship.
- (4) His exhibition during school days, of moral force of character, and of instincts to lead and to take an interest in his school-mates, for those latter attributes will be likely in after life to guide

him to esteem the performance of public duties as his highest aim. As mere suggestions for the guidance of those who will have the choice of students for the scholarships, I request that,—

(1) My ideal, qualified student would combine these four qualifications in the proportion of three-tenths for the first, two-tenths for the second, three-tenths for the third, and two-tenths for the fourth qualifications. . . .

(2) The marks for the several qualifications will be awarded independently as follows, i.e., the marks for the first qualification by examination, for the second and third respectively by ballot by the fellow students of the candidates, and for the fourth qualification by the head master of the candidate's school, and

(3) The results of the awards, i.e., the marks obtained by each candidate for each qualification would be sent as soon as possible for consideration to the Trustees or to some person or persons appointed to receive the same, and the person or persons so appointed would ascertain by averaging the marks in blocks of 20 marks each, of all candidates, the best ideal qualified students."

Next after a provision that no student shall be qualified or disqualified for election to a scholarship on account of his race or religious opinions, and that the election to the Colonial and American scholarships shall be by the Trustees after such (if any) consultation as they shall think fit with the Minister having control of education in each Colony, Province, State or Territory,—there follow clauses which state conclusively that the Rhodes scholars must become residents of one or other of the Colleges, and must be undergraduates. The clauses to which I refer are the following:

"A qualified student who has been elected as aforesaid shall within six calendar months after his election or as soon thereafter as he can be admitted into residence or within such extension of time as my Trustees shall allow, commence residence *as an undergraduate* at some College in the University of Oxford. The scholarship shall be payable to him from the time when he shall commence such residence. I desire that the scholars holding the scholarships shall be distributed among the Colleges of the University of Oxford and not resort in undue numbers to one or more College only."

The part of the Will dealing with the Colonial and American scholarships, closes with the following provision:—"In order that the scholars past and present may have opportunities of meeting and discussing their experiences and prospects, I desire that my Trustees shall annually give a dinner to the past and present scholars able and willing to attend, at which I hope my Trustees or some of them will be able to be present, and to which they will, I hope, from time to

time, invite as guests persons who have shown sympathy with the views expressed by me in this my Will." The Trustees named in the Will are the Earl of Rosebery, Earl Grey, Lord Milner, Mr. Alfred Beit, Dr. L. S. Jameson, Mr. L. L. Michell, and Mr. B. F. Hawksley.

A codicil executed in South Africa, after stating that the German Emperor had made instruction in English compulsory in German schools, establishes fifteen scholarships at Oxford of £250 tenable for three years for students of German birth, to be nominated by the German Emperor, for "a good understanding between England, Germany and the United States of America, will secure the peace of the world and educational relations form the strongest tie."

Lengthy as the above account of the provisions of Mr. Rhodes' Will has necessarily been I cannot consistently with my object of shewing the light which the will throws upon the personality of the testator, omit mention of another codicil settling the Dalham Hall estate in England, by which he aims at giving effect to the ideas expressed in the following recitals:—

"Whereas I feel that it is the essence of a proper life that every man should during some substantial period thereof, have some definite occupation, and I object to an expectant heir developing into what I call a "loafer"; and whereas the rental of the Dalham Hall estate is not more than sufficient for the maintenance of the estate, and my experience is that one of the things making for the strength of England is the ownership of country estates, which could maintain the dignity and comfort of the head of the family, but that this position has been absolutely ruined by the practice of creating charges upon the estates either for younger children or for the payment of debts whereby the estates become insufficient to maintain the head of the family in dignity and comfort; And whereas I humbly believe that one of the secrets of England's strength has been the existence of a class termed "country landlords," who devote their efforts to the maintenance of those on their property; And whereas this is my own experience, Now therefore I direct, etc.

So much for the provisions of Mr. Rhodes' Will, the main point established so far as the Rhodes scholars are concerned being, perhaps, that they will have to enter the University as undergraduates and as residential members of the various Colleges among which they are to be divided up. The College authorities therefore are not to be exposed to any difficulties of domestic discipline which might possibly result from the introduction within the walls of the College of a number of men of mature years who have already graduated in the countries from which they came. As it is, the dons seem to regard

the prospects from a disciplinary point of view with a certain amount of apprehension, if one may judge by the witty verse-maker from whom I have already quoted.* For my own part, judging by my own experience of Canadian students, I believe the Rhodes scholars will prove to be, for the most part, the most diligent and well-behaved of Oxonians. These, however, are the verses to which I refer,—put in to the mouth of the Dean of Oriel :

“Then though they come in shoals and scores
 From lands of various names,
 Though Murrumbidgee daily pours
 His waters in the Thames;
 Though ‘Cornstalks’ stalking in the ‘Corn’
 Affright the unwonted don,
 And men in Patagonia born
 Surprise the Bursch from Bonn.
 Though from each state Columbia’s soil
 Supply an undergrad.,
 And all Australia come to boil
 Its billy in the quad;—
 Not mine decanally to cope
 With students from thy Cape, Good Hope,
 Or Germans on the Spree;
 Britannia’s youth supplies a scope
 Sufficient quite for me;—
 Or if compelled for Mods. or Greats
 Colonial undergraduates
 With classic lore to cram,
 Full blest I’ll deem their humble lot
 Who by capitalists forgot
 Inhabit some sequestered spot
 Beside the waves of Cam.”

II.

So much then being regarded as established, I would desire now to say a word or two upon the subject of how far this remarkable offer of Mr. Cecil Rhodes to defray the expenses of their Oxford education is likely to prove a true boon to the Rhodes scholars, and especially to such Canadians as may hereafter find themselves in that distinguished position. Now in the first place we are not concerned with the question whether it would be a desirable thing or not for the average young Canadian to go through Oxford. For my own part

* *Second Strings*. By A. D. Godley, London: Methuen & Co.

I believe that for the ordinary man it will prove more conducive to his future success and happiness in life that he should receive his education in the country in which he is destined to live and work, and also that probably the methods of Canadian Universities are those which experience has shown to be on the whole the best suited for the ordinary Canadian student. But we are not here concerned with ordinary Canadian students. The Rhodes scholars will be very picked men indeed and they are now to be offered "all the advantages of an Oxford education," as the common phrase has it. How far is this likely to be indeed an advantage to them?

Now, it is true that the Rhodes scholars are not to be selected solely for scholarship, but the insistence of a *corpus sanum* and a *mens sana* in addition to scholarly acquirements makes it all the more certain that the men we send from Canada will be susceptible to all the best intellectual and spiritual influences of Oxford. They will not be men who can derive no special advantages from the lectures of Dicey, Pollock, Anson, Caird, Robinson-Ellis, Rashdall, Pelham, Stewart and Greenidge. Nor will they be men who cannot read the sermons in Oxford's stones and the books in Oxford's brooks, or in whom Matthew Arnold's famous, though perhaps mildly satirical, apostrophe would awaken no responsive chord:—

"Beautiful city, so venerable, so lovely, so unravaged by the fierce intellectual life of our century, so serene!

There are our young barbarians all at play!

And yet, steeped in sentiment as she lies, spreading her gardens to the moonlight, and whispering from her towers the last enchantments of the Middle Ages, who will deny that Oxford, by her ineffable charm, keeps ever calling us nearer to the true goal of all of us, to the ideal, to perfection—to beauty, in a word, which is only truth seen from another side?—nearer perhaps than all the science of Tuebingen. Adorable dreamer, whose heart has been so romantic; who hast given thyself so prodigally, given thyself to sides and to heroes not mine, only never to the Philistines; home of lost causes, and forsaken beliefs, and unpopular names, and impossible loyalties; what example could ever so inspire us to keep down the Philistine in ourselves?"

Now, in the first place, the Rhodes scholars will have the advantage of that residential system to which as we have seen their founder attached so great importance, and to which no doubt is mainly due the great advantage which has been attributed to an English University training of giving "a pound of education to every ounce of learning." Mr. Augustine Birrell has spoken of this matter in one of his latest essays:—"To speak disrespectfully of a College," he

says, "is in most Englishmen's eyes as bad as insulting a mother. It is within the crumbling walls of Colleges that man meets with man, that permanent friendships are formed, habits of early rising contracted, lofty ambitions stirred. It is indeed a great and stirring tradition. Who does not recall the neat little banquets in the monastic cells? Which of us who is clad in the sober russet of middle age can gaze without emotion on the old break-neck staircase in the corner of an ancient quadrangle, where once he kept and where were housed for a too brief season the bright-coloured and long since abandoned garments of a youth apparently endless and of hopes that knew no bounds."

But besides the College life and the lectures to which they will have a chance of listening, there is another respect, not perhaps quite so obvious, in which I believe an Oxford course will prove a valuable supplement to the education of Canadian Rhodes scholars. There is a well-known definition of an educated man, as a man who knows everything of something and something of everything. Now, the former half of this ideal whole is, I take it, far the more important, and I think that the Canadian student will find to his advantage that this fact is more recognized in the Oxford course than it is perhaps at most Canadian Universities, which strive to cover so much ground in their courses that it is not possible to go really deeply into any one matter, or into any one subject of study. I am aware that I am speaking from a basis of imperfect knowledge, but still I believe that there is a germ of important truth in what I am stating and that the Canadian Rhodes scholar will find that at Oxford the boundaries of study are more restricted than they are wont to be at Canadian Universities, and that from this fact alone he will derive a great advantage. There must always be, I contend, far more real education in trying to learn everything of something than in trying to learn something of everything. Certainly one might know something of everything, and yet be only a multi-form ignoramus of an aggravated type.

Now, at Oxford, an undergraduate has only two public honour examinations during his career, 'Moderations,' which he takes after a year and a half or two years, and in which he must choose between classics, on the one hand, or mathematics on the other, and the Final School at the conclusion of his four year course. In each of these he may be placed in the first, second, third, or fourth class, but his class in Finals is what really counts. When we speak of an Oxford first-class man we mean a man who has taken a first in one of the Final Schools. Now, these Final Honour Schools, or as we should say Faculties or Departments, are seven in number, Literæ Humaniores, Mathematics, Natural Science, Jurisprudence, Modern History,

Theology and Oriental studies. Very few men go in for more than one of these Final Schools, though some attempt to take two, as for example, Jurisprudence after Modern History. One, however, is all that is necessary to get a man his class and entitle him to his B.A. and subsequently to his M.A. degree, and according to his class is his subsequent status as an Oxford graduate. Now, when we look at the course prescribed for these schools we see how the student is invited rather to read deeply than widely. Thus in the School of Literæ Humaniores the stated subjects are the Greek and Latin languages, the History of Ancient Greece and Rome, to be studied as far as possible in the original authors, Logic and the Outlines of Moral and Political Philosophy, the candidate as to the last named being required to offer at least two treatises of ancient authors. But modern philosophers, though admitted, are expressly not required: and as to the histories of Ancient Greece and Rome the student is only to offer a period—in Greek history, either to the end of the Peloponnesian War, or from B.C. 478 to B.C. 322, and in Roman History either from the beginning of the first Punic War to the Battle of Actium, or from the end of the third Punic War to the accession of Vespasian. So in Modern History, though the candidate is to be examined so far as the History of England is concerned in the continuous constitutional history and the continuous political history to 1837, so far as General History is concerned he is only to take up one of the following periods, A.D. 476 to 1002, 919 to 1273, 1273 to 1519, 1414 to 1598, 1559 to 1715, or 1715 to 1815. Then again, Jurisprudence is not a mere subordinate branch of some widely extended Department of Political Science, but a School by itself, comprising General Jurisprudence, Roman Law, English Law so far as it concerns the Law of Contract, Succession, Real Property, and of the Constitution, the History of English Law and International Law—enough, in all conscience, if a man is to get more than a mere elementary smattering, to take up two years of study without combining other distinct subjects with them. *Ex tribus nosce omnia.* Oxford will take the Canadian Rhodes scholar deeply into a few things rather than superficially into many things, and I would submit once more that there is far more of real education in going a little deeply into one thing—more to call out mental capacity and give insight into true knowledge—than there is in a hurried survey of many things.

Before concluding I would like to revert once more to the subject of post-graduate courses. There is, I think, at Oxford really only one post-graduate course, namely that for the Degree of Bachelor of Civil Law, which is only open to those who have already been



admitted to the degree of Bachelor of Arts in the University. But by a recent innovation, not altogether pleasing, I am informed, to Oxford Conservatism, there has been introduced a course which may serve the purpose of many Rhodes scholars better than the ordinary under-graduate courses. I refer to that for the Degrees of Bachelor of Letters and Bachelor of Science. I have before me the Oxford Examination Statutes of 1901, and I think it may be useful briefly to state here what the provisions are in this matter. I find that any person who has been matriculated in the University, and has kept eight terms, (there being four terms in the year,) by residence within the University, may give notice to the Secretary to the Boards of Faculties of his desire to enter a course of special study or research as a candidate for the degree of Bachelor of Letters or of Science, as the case may be, stating in such notice in general terms the subject and nature of the proposed course, which is to extend over a complete year, at least. The Secretary shall transmit every such notice received by him to the Chairman of the Board of the Faculty or Studies, which includes the proposed subject, whose approval is only to be granted if the candidate has already passed the examination required for the degree of Bachelor of Arts, "*or has given evidence that he has received a good general education*" satisfactory to a committee composed of representatives of each of certain named Boards of Faculty or of Studies, (under which latter clause, I take it, graduates of Canadian Universities would be eligible), and has also satisfied the Board of Faculty or Studies to which his subject belongs of his fitness to enter on a course of special study or research, and that the course of study or research on which he proposes to enter is such as may profitably be pursued under the direction and superintendence of the Board. Such a candidate, after completing his proposed course of study or research may apply for a certificate that, so far as proficiency in the subject of his course of special study or research is concerned, he has attained a high standard of merit. The Board of Faculty or Studies shall then appoint examiners, who shall satisfy themselves as to the merit of the candidate and his proficiency in the subject of his course of special study or research, either by examination or by requiring a dissertation or report of work done, but any candidate submitting such a dissertation or report shall be further publicly examined in his subject, and if the examiners in either case report the candidate to have attained a high standard of merit a certificate, as above mentioned, may be granted, and armed with such certificate the candidate may supplicate for the degree of Bachelor of Letters or of Science, and after he has had his name on the books of some College or Hall

or on the Register of Non-Collegiate Students for twenty-six terms, for the degree of Doctor of Letters or Doctor of Science.

I owe the following further information as to this very liberal innovation to Mr. W. L. Grant, of Balliol College, son of the late Principal Grant, who has very recently achieved the distinction of first-class honours in *Literæ Humaniores*: "During my time Mr. H. P. Biggar, late of Toronto University, received the degree for his research into 'Early Trading Companies of New France.' An American friend of mine, Mr. Wilbur Abbott, received it for an enquiry into the beginnings of Party Government in England. A Russian was said to have submitted either (1) Middle Chinese Syntax, or (2) the Uro-Tartaric dialects. He was referred to a committee composed of the lecturer on Chinese and Professor Margoliouth. An American at Balliol in my time was researching the fourth dimension of space. So you see that each case is separately considered and that the range for subjects is wide."

A. H. F. LEFROY.

THE PORTLAND CEMENT INDUSTRY.

EARLY DISCOVERIES.

UP to the middle of the 18th century it was believed that the hardest hydraulic limes were made from the hardest and purest limestones. In the year 1756 Mr. John Smeaton, an Englishman, in course of certain experiments found that this was not true; that on the contrary hydraulicity was due to the presence of clay matter in the limestone.

A few years later this gentleman was entrusted to rebuild the Eddystone lighthouse. In this structure he used an hydraulic lime made by calcining a rock containing a certain percentage of clay material. So this beacon of the channel "stands to-day not only as a guide to ships that pass in the night, but also as a monument to mark the starting point in all that we know concerning hydraulic cements."

Three-quarters of a century passed and scarcely any advancement was made. Manufacturers and engineers seemed satisfied with the natural hydraulic cements. However, a surprise was in store. In 1824 Mr. James Aspdin, a brick-layer, of Leeds, England, reasoned: "if the degree of hardness and hydraulicity are proportional to the amount of clay matter present, why not add clay to limestone and calcine the mixture?" Experimenting along this line he hit upon a mixture which, burnt at a high temperature and ground to a powder, formed, when mixed with water, a cement much harder than anything yet produced. Noticing strong resemblances in point of color and texture, between his cement and the oolitic limestone from the island of Portland, he named the former Portland Cement. He may also have been influenced by business reasons, because this Portland rock had for centuries been in favor as a building stone, being the material used in the construction of many famous public buildings including St. Paul's Cathedral, London.

Following this a number of works were built in the Medway and Thames district, but, owing partly to the rule of thumb methods used in mixing the raw materials, and partly to crude and imperfect machinery, the products were seldom of the best quality.

DEVELOPMENT OF KILNS, INTERMITTENT AND CONTINUOUS.

The burning was done in a kiln not very unlike the ordinary lime-kiln we see in this country. It consisted of a barrel-shaped shaft about 35 feet high, and 10 feet at its greatest diameter. A few feet from the bottom were placed iron grates, and on these grates alternate layers, composed of coke and bricks of the dried mixtures, were dumped down from an opening near the top. This mass was fired at the bottom and allowed to burn itself out, which required us-

ually three days. After cooling down, the residue consisting of underburnt material and clinker, was drawn off at the base and assorted. This kiln, with improvements tending towards economy, was used entirely until 1884, when Mr. Deitch patented a shaft-kiln which could be worked continuously. Since then, other forms of continuous kilns have been built each giving satisfaction on account of their economy. But the greatest advance came with the advent of the rotary kiln invented by Mr. Ransome, of England, in 1887.

For years England held a monopoly in cement manufacture and exported much. However, this was not to last. In spite of high walls built around the factories, foreigners grasped the secrets of the business.

The Germans, always true to their characteristic national method, which is to develop systematically and patiently the details of a general principle, made no exception of this case. The English had discovered that a superior cement could be made from calcium carbonate and clay; the Germans determined by chemical means the exact proportions required, and by using the calcimeter could gauge the mixture very closely before burning. They also discovered that a small percentage of plaster of Paris added to freshly ground cement had the effect of making it slow in setting.

M. Le Chatelier, a Frenchman, in 1887, was the first to give the world a theoretical formula of the chemical composition of cement. He held that it consisted of a tricalcium silicate together with a slightly variable amount of tri-calcium aluminate.

This stood until 1897, when Messrs. S. B. and W. B. Newbury, of the United States, preparing silicates and aluminates of lime synthetically, found that cement was a mixture of tri-calcium silicate and di-calcium aluminate, expressed thus:—

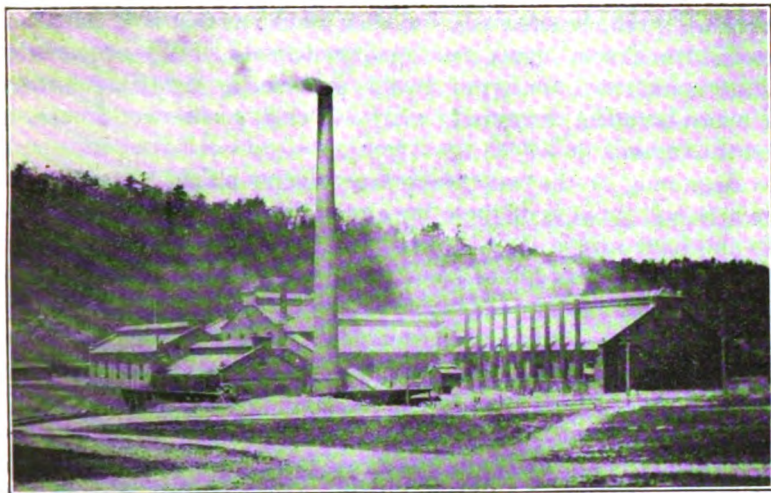


From this we deduce the formula that the percentage of lime = $2.8 \times$ percentage of silica + $1.1 \times$ percentage of alumina. This is the formula used by most cement chemists to-day as a standard for a well balanced clinker.

THE INDUSTRY IN THE UNITED STATES.

Before 1871 no Portland Cement was made in America. In that year Mr. D. O. Saylor, of Coplay, Pa., who had been manufacturing a natural hydraulic cement succeeded in making a low grade Portland cement by burning a mixture of pure limestone and argillaceous limestone which abounds in that locality. Since then Mr. Saylor and his successors have improved and enlarged their factories and to-day these mills along with thirteen others which have since been established within a circle of fifteen miles' radius, are producing a high

grade of Portland cement at figures probably lower than anywhere else.



Aisen's Plant. Dry Process.

What is known as the dry system is used entirely here. The argillaceous limestone being a little low in lime has a small percentage of pure limestone added to it. The chemical composition of both ingredients is carefully determined, then after being measured in automatic weighing devices and intimately blended by being ground to an impalpable powder, the mixture is burned in rotary kilns.

The success reached by these manufactories in the Lehigh Valley, broke the prejudice of engineers against the home-made article, and the demand soon grew greater than this region could supply.

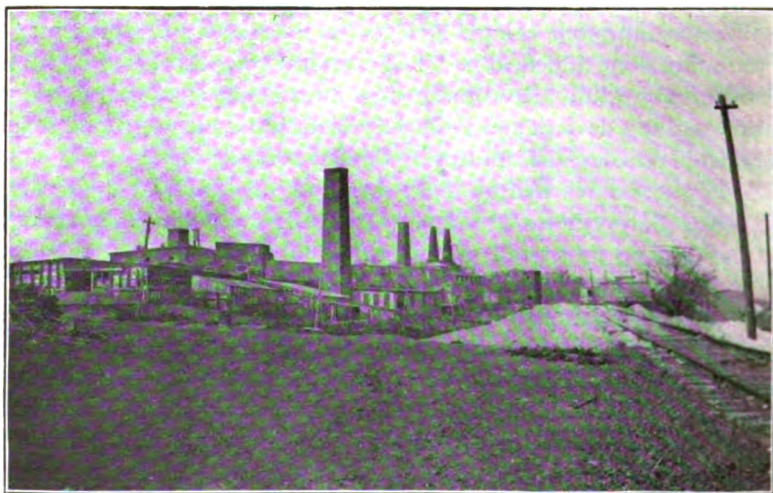
A few factories were then built in New York and other states, but it was in Michigan that the industry was next to establish itself strongly. In this state nearly every lake and marsh rests on a substratum of marl. This is a soft, putty-like material consisting of nearly pure calcium carbonate. In Michigan the color is bluish, but in other places it is as white as snow. It was found that a mixture of this substance with clay could be effected and that the resulting slurry could be easily burned in rotary kilns so as to make a first rate clinker. Several works were at once erected, and although the operators at first saw many dark days in meeting the new conditions, they have ultimately triumphed. And to-day ten large plants turn night and day, during all but the coldest month, successfully producing a high-grade cement.

THE INDUSTRY IN CANADA.

In Canada manufacturers have been awake, and in spite of their being handicapped in respect of the item of fuel, the industry has grown within the last few years to such an extent that now Canadian factories can almost supply the Canadian demand. As yet the manufacture is limited to Ontario. In this province as in Michigan there are many beautiful deposits of marl and clay, so the wet process is used throughout.

Beginning at the west, there are several plants located about Owen Sound. Some of these have met with a fair amount of success and have turned out a good quality of cement, but the systems used are more or less cumbersome and as yet no great quantities have been produced. Next year, however, a new plant situated at Durham is expected to reach a considerable out-put. This factory has nine rotary kilns. All the machinery is electrically driven by power generated from steam.

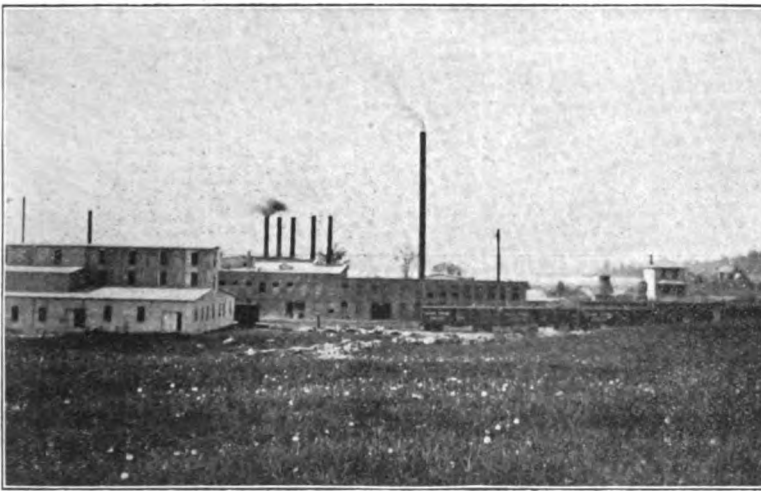
Farther east, at Lakefield, there was last year erected a plant of three rotaries. The works here are entirely driven by electricity furnished at a power house on the Otonabee River. The mill is small but very efficient and produces a good cement.



Canada Portland Cement Co's Works at Strathcona. Continuous Shaf Kilns.

About ten years ago the Rathbun Co., of Deseronto, began manufacturing Portland cement at Strathcona. Here there is a large bed of pure blue clay. To this clay they added about 75 per cent. of marl which is brought by the Bay of Quinte Ry. from Marlbank. Both these ingredients are very pure, and when properly mixed and ground

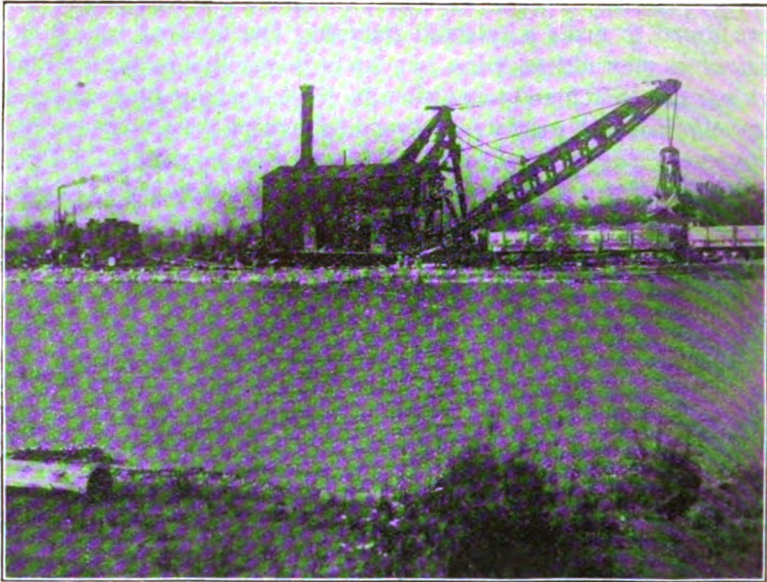
were found to make a splendid cement. The burning was at first effected in intermittent kilns, but lately in continuous kilns. They now use one Deitch and two Calborgs. This company observed great care and at length produced a brand of cement that is not excelled anywhere. But as Strathcona is 40 miles away from the marl deposits and the system is rather expensive, the works here have ceased to grow. The heart of the industry in the Bay of Quinte district has been transferred to Marlbank, where the Canadian Portland Cement Co. has lately built a most modern plant.



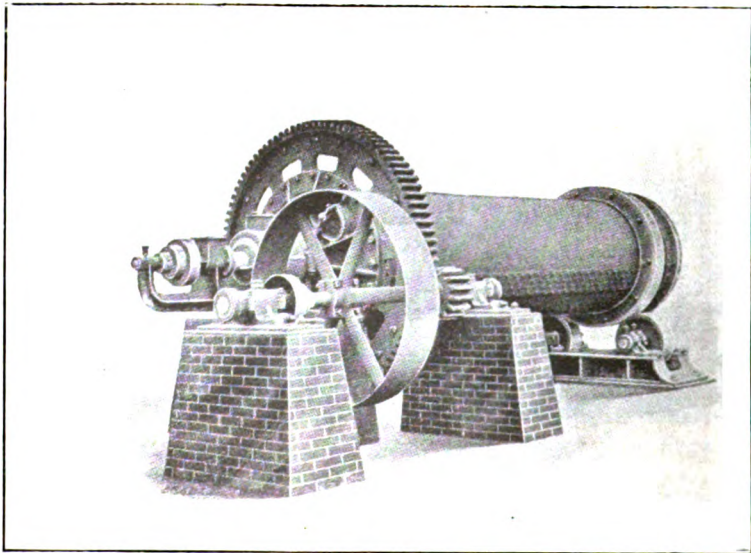
Canada Portland Cement Co's Works, Marlbank, Ont. Rotary Kilns, Wet Process.

Near Marlbank there is a deposit of white marl averaging 97 per cent. calcium carbonate. This extends to about 35 feet in depth. Under it again there is a bed of soft blue clay varying from 10 feet to 15 feet. It is thus seen that if Nature did not intentionally plan the great manufactory now thriving here, she certainly made things very convenient, for there is no waste of raw materials.

A steam dredge digs out a cut of marl which is loaded on dump cars, then taken to the raw material department of the works, where it is dumped into a wash mill and dragged into a paste. After the marl is taken out of that cut, the clay is similarly loaded and dumped into a wash-mill placed alongside the marl wash-mill. After its contents have been thoroughly stirred and mixed, each wash-mill overflows through a grate into double agitating basins, where the stuff from each is further washed to a uniform paste so as to be easily pumped. From these basins the materials are pumped separately into measuring cylinders. These consist of two cylinders with cone



Dredge Digging Marl and Clay, Marlbank, Ont.



TUBE MILL.

bottoms fitted with discharge valves. They stand side by side over a receiving pit supplied with an agitator. While one cylinder is being filled with marl, the other is filled up to a certain point with clay. This point is marked by the chemist who has previously analyzed the materials from samples taken from the agitating basins. The contents of the cylinders are now dropped through a spout into the pit below. The operation is continuous. As the mixture is dropped from above, a pump drains off from the bottom of the receiving pit, and passes the slurry on to a series of tubemills and emery wheels, where not only a most intimate mixture is made but also such a fineness is reached that 97 per cent. will pass through a sieve of 10,000 meshes per square inch.

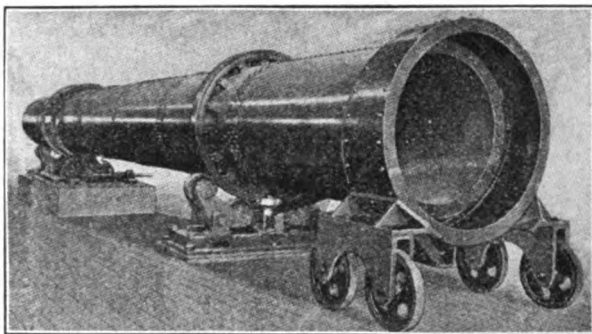
A tubemill is a horizontal cylinder about 18 feet long and 5 feet in diameter. It is lined with oak and maple blocks set so that the ends of the grain form the wearing face. End plates are bolted on and then filled half full with steel balls $1\frac{1}{4}$ inch in diameter. As the tube revolves, the slurry pumped into one end is gradually ground by the rolling action of the balls until it reaches the discharge end. The emery wheels do similar work to the tubemills. Discharged from these machines the slurry is carried by a screw conveyor to a row of pits where it is agitated for a few hours, when again the chemist takes a sample and makes an analysis of it. If he finds the mixture not exactly correct, a sufficient quantity of either marl or clay, as the case may require, is now added so that before the slurry enters the kilns it is within one-tenth of 1 per cent. of the correct proportions to produce a normal clinker. From the pits, where a thorough mixing has been effected, the slurry is pumped into two batteries of iron-concrete tanks 20 feet high by 14 feet in diameter, where it is stored until the kilns are ready to receive it. In the tanks the slurry is kept in constant agitation by compressed air. Between the two rows of tanks, there is a ditch into which the tanks discharge. The ditch runs past the slurry ends of the kilns and is provided with a screw conveyor. A pump with a variable speed attachment pumps out of the ditch into each kiln.

THE KILN DEPARTMENT.

The style of kiln now used in all modern plants in America is known as the rotary. It was invented fifteen years ago in England, by Mr. F. Ransome, who experimented in the Medway district with it. In his hands, however, it proved a failure, and in England the idea was abandoned. But a foreigner, this time an American, caught the idea and developed the details in such a way that to-day it is the best style of kiln extant, and during the last three years, English en-

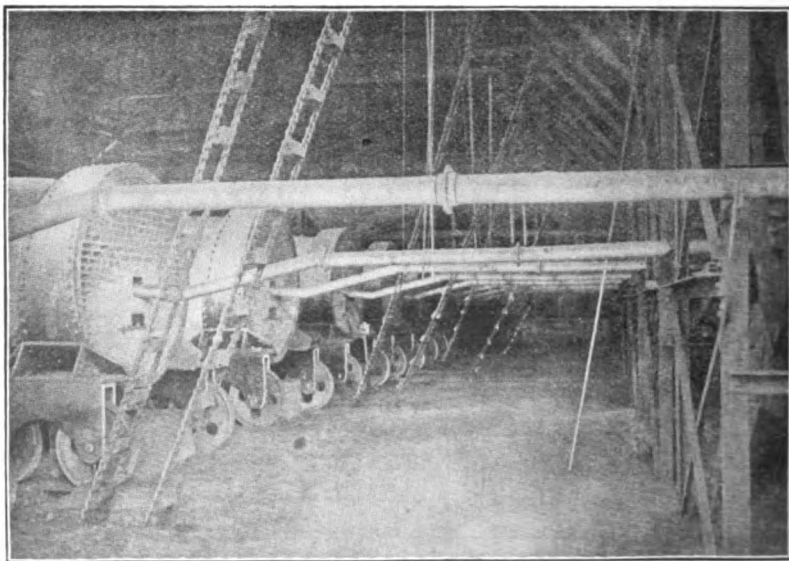
gineers have been coming to America to learn the secrets of rotary kiln construction.

This kiln is a steel cylinder from 60 to 100 feet in length and from 5 to 8 feet in diameter. Mounted on roller bearings the kiln is slightly inclined with the horizontal. A large gear surrounding the shell about half way from either end, gives the kiln its motion. It



A ROTARY KILN.

has been found advantageous to have the gearing that drives the kiln connected with a variable speed counter-shaft by means of which the operator can vary the speed from $\frac{1}{2}$ revolution per minute to two revolutions per minute. This kiln is lined with fire bricks to within 20



Rotary Kilns, with Fuel Piping and Elevators for handling hot clinker.

feet of the slurry end. This part is fitted with channel irons placed two feet apart and running parallel with the longer axis of the cylinder. At the elevated end a smoke-stack is built to carry off the waste gases.

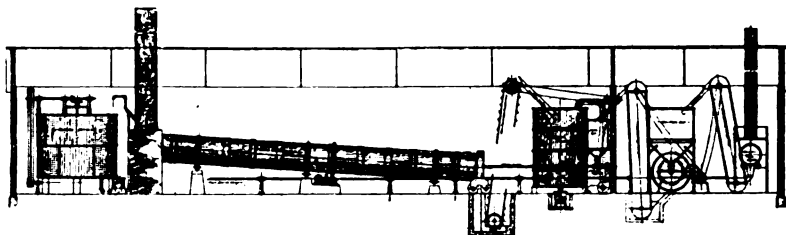
At the lower and opposite end a 7 inch. iron pipe enters through the centre of the hood. This pipe furnishes the kiln with fuel which at the present time consists of bituminous coal, dried and ground to a powder. The coal is prepared in a separate department. First it is conveyed from cars to rotary dryers, then crushed in crushers and ground in tubemills in which flint pebbles take the place of steel balls. From the tubemill it is conveyed to tanks with hopper bottoms, placed in front of the kiln. A screw conveyor driven by a speed regulator draws it from this tank dropping it into a syphon where an air blast drives it into the kiln. It burns immediately on entering the kiln, giving a temperature of about 3000° F. in the hottest zone which extends from 5 ft. to 25 ft. back.

The slurry which is pumped into the kiln at the elevated end slowly winds its way to the lower end. As the kiln revolves the slurry is carried up at first by the channel irons, and when a certain height is reached, it falls to the bottom passing through the hot gases which at first carry off the water vapor and later the carbon dioxide. After passing beyond the reach of the channel irons, it is dry enough to stick to the bricks till it reaches the top, and this operation is repeated once for each lineal foot the material travels. By the time it reaches the hottest zone, it is thoroughly dried, but not completely calcined. In this zone the calcining is finished and a chemical combination takes place between the basic and acid elements of the semi-fused materials forming clinker. The clinker then rolls out of the hood in particles varying in size from a pin-head to a hickory nut. The advantages of this system of burning may be summed up as follows: (1) the slurry does not require to be dried and moulded into bricks before entering the kiln. This saves much labor, time and expense. (2) The burner has complete control of the process of burning. He has three variables at his command; he can vary the feed of the slurry, and coal, and also the speed of the kiln. By means of blue glasses he can see into his kiln from either end and watch the whole operation. (3) No raw material gets past the hot zone because the burner can distinguish the raw from the burnt, and when he sees raw material from the front end he adds heat or slows his kiln.

An objection is raised by a few to this system of burning. They hold that where so much coal is used to make the clinker, a great deal of ash from the coal must enter into the clinker. These persons lose

sight of the fact that the greater part of the ash is silica and alumina, which acts as clay, and is in no wise objectionable, because it can be counteracted in the raw mixture.

However, we must admit that although the rotary kiln is the best kind known, it is still a very wasteful machine. In most mills the gases pass out of the smokestack at 1500° F., and the clinker passes out of the other end at a still higher temperature. Hence, at a glance one sees the tremendous loss of energy involved. Here lies the rea-

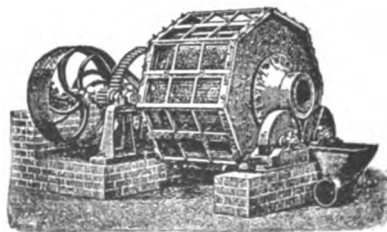


Elevation Plan of Rotary Installation System.

son why too much coal is used. This fact is claiming much attention now and we may expect radical improvements soon.

ARTIFICIALLY COOLING THE CLINKER.

The scheme, which is by no means satisfactory, but is looked upon as one of the best extant, is Mr. Mosier's system. This is installed at Marlbank. The Mosier cooler is a cylinder 20 feet high and 8 feet in diameter. One is sufficient to cool the clinker from two kilns. It stands in front of the kilns, and as the clinker drops out of the kiln hood an elevator lifts it to the top of the cooler. It falls inside and strikes cones or discs which surround a cast-iron pipe running up through the centre. Cold air is forced out through openings in this pipe, and as the clinker falls from disc to disc it is cooled. At the bottom the cold clinker is drawn off into a dump-car, which is hoisted to large bins above the grinding machinery in the grinding department.



SMIDTH BALL-MILL.

GRINDING THE CLINKER TO CEMENT.

Before the car of clinker is dumped into the bin above the ball mills, about $1\frac{1}{2}$ per cent. of Plaster of Paris is added. If it were not the cement would, as was before mentioned, be too quick in setting. The clinker is then fed into each ball-mill by an automatic disc feeder, a machine patented by F. L. Smidth & Co., New York, who constructed all the machinery in this department.

This company's latest improved ball-mill consists of a cylindrical steel structure about six feet in diameter and six feet in length. It is lined with heavy nickel steel castings, so arranged as to form a circle of steps. This is filled half-full with hardened steel balls, varying from 3 in. to 4 in. in diameter. The clinker enters through the centre of a bearing, and after being ground passes out under the steps, and, when it is fine enough to pass through the revolving screen, drops into a conveyor to be carried to a bin over the battery of tubemills. The coarse residue is again returned and ground a second time.

The finishing grind is done in No. 16 tubemills, lined with blocks of flint instead of blocks of wood. Flint pebbles are used here.

Every few hours samples of each mill's grind are sifted, and if there is more than 5 per cent. residue left on a sieve of 10,000 meshes per square inch, or more than 20 per cent. on a sieve of 40,000 meshes per square inch, the feed of the mill is reduced.

At the end of every twelve hours an average sample of the grind of that period is made into briquettes, having a section of one square inch. These are made by mixing cement with about 21 per cent. of water in the case of neat briquettes, and a less percentage where a mixture with sand is used. Two of these are broken at the end of 24 hours, during which time the briquettes have lain in moulds in a moist atmosphere. The remaining ones are then placed in water. Two more are broken in each of the following periods, three days, seven days, twenty-eight days, and three months, to determine their tensile strength, which must surpass standard specifications. A sample of cement made at Marlbank this summer taken at random, ran as follows:—

1 day,	275	lbs.	per.	sq.	in.
7 days,	630	"	"	"	"
28 days,	925	"	"	"	"
3 mos.,	960	"	"	"	"

From this same sample pats are made, which being set in moist air give the time of both initial and final set, and after being placed

in steam for twelve hours, and then in water for the same length of time, prove by their condition at the end of the test whether or not the cement is sound.

All the leading Canadian manufactories go through this elaborate system of tests. Engineers need no longer entertain fears and doubts as to the quality of their work. Canada produces as good Portland cement as is furnished by any country in the world.

PERCY F. BALFOUR.

THOREAU'S "WALDEN."

OF all Thoreau's works "Walden" is the most widely known and read. The general interest is partly due to the striking experiment which the book describes, and partly to the intrinsic character of the book itself. Here was a man, not in the third or the eleventh century, but the nineteenth; not on the banks of the Ganges, nor among the sands of the Thebaid, but in New England, with its salt cod, and wooden nutmegs, and clock-making Yankees, who determined to cast off the old clothes of convention, and retire to the wilderness that he might *live*. But it is not merely that there is something to arouse foolish or intelligent curiosity. None of his books lets us see so many sides of Thoreau's character. The backwoodsman, the naturalist, the poet, the philosopher, the handy Yankee with a dash of French blood in him, all look out from his page by turns, and sometimes almost all together. None of his books is so deeply infused with the very spirit of the man himself. It would seem as if the two years spent in the quiet of Walden Woods enabled him to speak out fully what was in him.

The revolt against the cynical and *blase* eighteenth century was represented in America by the Transcendentalists of New England. To New England, the Republic owes nearly everything worth having. She was the first to defend the rights of the Colonies, and first to develop a great commerce. In every political crisis, New England has shown herself the brain and conscience of the United States. Not prolific of presidents, who generally require very peculiar qualifications, she has produced wise statesmen, educators and reformers. And in the highest regions of thought and action, the United States would indeed be poorly represented, without the names of Emerson, Thoreau, Margaret Fuller, Hawthorne, Franklin, John Brown, Garrison, Webster, Parker, Bancroft, Mrs. Stowe, Whittier, Longfellow, Bryant, Lowell and Holmes.

The little town of Concord, Massachusetts, is famous as having been for some years the home of the first four mentioned above. Its citizens were remarkable, even in New England, for their piety, frugality and faith in ideas. With them "plain living and high thinking" were daily realities. Here Henry David Thoreau was born in 1817. His grandfather, John Thoreau, was a native of St. Helier, in the island of Jersey, and emigrated to New England about 1773. His son John, father of the author of "Walden," lived in Concord and followed the trade of pencil-making. Henry's mother was Cynthia Dunbar, the daughter of a New Hampshire clergyman. Among his ancestors were David Orrok, a Quaker, and a Scotch gentleman named Burns.

Thoreau was educated at a private school in his native town, and entered Harvard at the age of sixteen, where he devoted himself chiefly to the study of Shakespeare, Milton, and the classics. While at college he became acquainted with Emerson, who recognized his genius and gave him valuable assistance. After graduating, he returned to Concord and with the exception of a few months, lived there or in the neighborhood till his death in 1862. He sometimes worked at his father's trade of pencil-making, once or twice taught school for a few months, and occasionally did some carpentering or surveying for his neighbors. He took long journeys on foot to the Maine and Vermont mountains, often ploughing his way through forest and swamp for ten miles at a stretch, and sleeping at night on the bare mountain side.

"In unploughed Maine, he sought the lumberer's gang,
Where from a hundred lakes young rivers sprang;
He trod the unplanted forest floor, whereon
The all-seeing sun for ages hath not shone;
Where feeds the moose and walks the surly bear,
And up the tall mast runs the woodpecker.
He saw beneath dim aisles, in odorous beds,
The slight Linnæ hang its twin-born heads,
And blessed the monument of the man of flowers,
Which breathes his sweet fame through the northern bowers.
He heard, when in the grove, at intervals
With sudden roar the aged pine-tree falls—
One crash, the death-hymn of the perfect tree,
Declare the close of its green century."

His early efforts in literature were mainly in the form of journals, and essays on abstract subjects, but as a result of his observation of nature in his own neighborhood and during his pilgrimages, he began to publish a series of more mature and finished works, such as "A Walk to Wachusett," "Katahdin and the Maine Woods," "A Week on the Concord and Merrimac Rivers."

"Walden" is also a book of forest, field and lake, but stands in a special relation to the current of New England thought. The dissatisfaction of noble minds with prevailing social conditions found expression, not merely in the endeavor to modify society through the medium of literature, but also in practical experiments, some of them pathetic and grotesque, others so noble, simple and natural that the only wonder is that they did not continue. Horace Greeley and Channing were interested in the Fourierite Phalansteries of New Jersey and Pennsylvania; Emerson, Hawthorne, Alcott and Margaret Ful-

ler in the communities of Brook Farm and Fruitlands. Thoreau, too, yearned for a simpler and more natural life. But he did not care to join any community; he always had something wild and solitary about him; and he built his famous hermitage by Walden Pond.

In the opening chapter of his book he tells how he was led to withdraw from the world. "I have travelled a good deal in Concord*; and everywhere, in shops, and offices, and fields, the inhabitants have appeared to me to be doing penance in a thousand remarkable ways. What I have heard of Brahmins sitting exposed to four fires and looking in the face of the sun; or measuring with their bodies like caterpillars, the breadth of vast empires; or standing on the tops of pillars—even these forms of conscious penance are hardly more incredible than the scenes which I daily witness.

"The twelve labors of Hercules were trifling in comparison with those my neighbors had undertaken, for they were only twelve and had an end; but I could never see that these men slew any monster or finished any labor. I see young men, my townsmen, whose misfortune it is to have inherited farms, barns, cattle and farming tools: for these are more easily acquired than got rid of. Why should they eat their sixty acres, when man is condemned only to eat his peck of dirt; Most men, even in this comparatively free country, through mere ignorance and mistake, are so occupied with the factitious cares and superfluously coarse labors of life, that its finer fruits cannot be plucked by them. It is very evident what mean and sneaking lives many of you live, for my sight has been whetted by experience; always on the limits, trying to get into business and trying to get out of debt, a very ancient slough, called by the Latins *aes alienum*, another's brass, for some of their coins were made of brass; still living, and still dying, and buried by this other's brass; always promising to pay, promising to pay, to-morrow, and dying to-day, insolvent; seeking to curry favor, to get custom, by how many modes, only not state-prison offences; lying, flattering, voting, contracting yourselves into a nutshell of civility; or dilating into an atmosphere of thin and vaporous generosity, that you may persuade your neighbor to let you make his shoes, or his hat, or his coat, or his carriage, or import his groceries for him; making yourselves sick, that you may lay up something against a sick day, something to be tucked away in an old chest or in a stocking behind the plastering, or, more safely, in a brick bank; no matter where, no matter how much or how little."

When Thoreau considers why men live thus, he concludes that it is through mere stupidity and false assumption. "They honestly think there is no choice left. But alert and healthy natures remem-

* Some of the passages quoted from "Walden" are considerably condensed.

ber that the sun rose clear. It is never too late to give up our prejudices. No way of thinking or doing, however ancient, can be trusted without proof. What everybody echoes or passes by as true to-day may turn out to be falsehood to-morrow, mere smoke of opinion, which some had trusted for a cloud that would sprinkle fertilizing rain on their fields. What old people say you cannot do, you try and find that you can. Old deeds for old people, and new deeds for new. One farmer says to me: 'You cannot live on vegetable food solely, for it furnishes nothing to make bones with'; and so he religiously devotes a portion of his day to supplying his system with the raw material of bones, walking all the while he talks behind his oxen, which, with vegetable-made bones, jerk him and his lumbering plough along in spite of every obstacle."

He finds the necessities of life to be only four—Food, Fuel, Clothing and Shelter.. These four may even be regarded as only two, for Fuel, like Food, only serves to supply vital heat, and Shelter is only an outer garment, which like clothing, helps to conserve it. The man who is worthy needs only these things and in the most moderate quantity. "Most of the luxuries, and many of the so-called comforts, of life are not only not indispensable, but positive hindrances to the elevation of mankind. With respect to luxuries and comforts, the wisest have ever lived a more simple and meagre life than the poor. The ancient philosophers, Chinese, Hindoo, Persian and Greek, were a class than which none has been poorer in outward riches, none so rich in inward. To be a philosopher is not merely to have subtle thoughts, nor even to found a school, but so to love wisdom as to live, according to its dictates, a life of simplicity, independence, magnanimity and trust. When a man is warmed by the several modes which I have described, what does he want next? Surely not more warmth of the same kind, as more and richer food, larger and more splendid houses, finer and more abundant clothing, more numerous, incessant, and hotter fires, and the like. When he has obtained these things which are necessary to life, there is another alternative than to obtain the superfluities; and that is, to adventure on life now, his vacation from humbler toil having commenced. The soil, it appears, is suited to the seed, for it has sent its radicle downward, and it may now send its shoot upward also with confidence. Why has man rooted himself thus firmly in the earth, but that he may rise in the same proportion into the heavens above?"

In March, 1845, Thoreau set about building in the pine woods near Walden Pond. He cut down young pines, bought an Irish navy's shanty for the boards, and working in the most leisurely manner,, had his house ready for occupation on the fourth of July. Just

before winter set in he shingled the walls, plastered the inside, and built a substantial old-fashioned fire-place. The materials, of which he gives an itemized account, cost \$28.12½. Before he began to occupy his house he planted an abandoned field beside it with beans, corn and potatoes, to help supply internal fuel. The soil which, in a state of nature, tends to produce pitch-pines, is not, as the farmer well knows, likely to be very productive; but the hermit, as he went up one row and down another with his hoe, cultivated himself as well as his beans, and harvested a fine crop of cheerful meditation. His housekeeping arrangements were, of course, of the simplest character; furniture and utensils "reduced to their lowest terms"; food limited almost wholly to unleavened rye and cornmeal cakes, molasses, potatoes, and rice which he obtained in exchange for beans; for as he says, he was "a Pythagorean, so far as beans are concerned, whether they mean porridge or voting"; and for drink, clear water from the Walden Pond.

His total expenditure for the first eight months was \$61.99¾. and his income \$36.78, so that adding the value of his house, furniture and utensils, he was as well off as when he begun, "besides the leisure, independence and health thus secured."

"For more than five years," he tells us, "I maintained myself solely by the labor of my hands, and I found that by working about six weeks in the year, I could meet all the expenses of living. It is not necessary that a man should earn his living by the sweat of his brow, unless he sweats easier than I do." It is clear that he did not care to get on in the world, but rather to get on in himself. "I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived. I did not wish to live what was not life, living is so dear; nor did I wish to practice resignation, unless it was quite necessary. I wanted to live deep and suck all the marrow out of life, to live so sturdily and Spartan-like as to put to rout all that was not life, to cut a broad swath and shave close, to drive life into a corner, and reduce it to its lowest terms, and, if it proved to be mean, why then, to get the whole and genuine meanness of it, and publish its meanness to the world; or if it were sublime, to know it by experience, and be able to give a true account of it in my next excursion." He vigorously condemns the fussiness, the want of centrality, the unhealthy strain, the clamorous and conflicting demands upon time and energy, which characterize modern life. "Simplicity, simplicity, simplicity! Our life is like a German Confederacy, made up of petty states, with its boundary forever fluctuating, so that even a German cannot tell you how it is

bounded at any moment. The nation itself, with all its so-called internal improvements, which, by the way, are all external and superficial, is just such an unwieldy and overgrown establishment, cluttered with furniture and tripped up by its own traps, as the million households in the land. Men think that it is essential that the *nation* have commerce, and export ice, and talk through a telegraph, and ride thirty miles an hour, whether *they* do or not; but whether we should live like baboons or men, is a little uncertain. If we do not get out sleepers, and forge rails, and devote days and nights to the work, but go to tinkering upon our *lives* to improve *them*, who will build railroads? We do not ride on the railroad; it rides upon us."

Having shuffled off this troublesome coil he found that his residence was "more favorable, not only to thought, but to serious reading, than a university"; and as at Harvard, his studies were mainly in the classics. His remarks are particularly valuable to those interested in education at the present time, adrift as we are on a heaving sea of fads and options. "The student may read Homer or Aeschylus in the Greek without danger of dissipation or luxuriousness. The heroic books, even if printed in the character of our mother tongue, will always be in a language dead to degenerate days. It is worth the expense of youthful days and costly hours, if you learn only some words of an ancient language, which are raised out of the trivialness of the street, to be perpetual suggestions and provocations. It is not in vain that the farmer remembers and repeats the few Latin words which he has heard. Men sometimes speak as if the study of the classics would at length make way for more modern and practical studies, but the adventurous student will always study classics. They are the only oracles which are not decayed, and there are such answers to the most modern inquiry in them as Delphi and Dodona never gave. We might as well omit to study nature because she is old. Books must be read as deliberately and reservedly as they were written. It is not enough even to be able to speak the language of that nation by which they were written, for there is a memorable interval between the spoken and written language. The one is commonly transitory, a sound, a tongue, a dialect merely, almost brutish, and we learn it unconsciously, like the brutes, from our mothers. The other is the maturity and experience of that; if that is our mother tongue, this is our father tongue, a reserved and select expression, too significant to be heard by the ear, which we must be born again in order to speak." And again, "Two thousand summers have imparted to the monuments of Grecian literature, as to her marbles, only a maturer golden and autumnal tint, for they have carried their own serene and celestial atmosphere into all lands to protect them against the corrosion of time."

He did not, however, spend the greater part of his time with his books. Nature spoke to him direct, without letter, or symbol, or metaphor. "Much is published, little printed." Sometimes he sat for hours in his sunny doorway, "imbibing delight through every pore." "I grew in those seasons like corn in the night, and they were far better than any work of the hands would have been. They were not time subtracted from my life, but so much over and above my usual allowance." Familiar sounds came to him from the outside world, invested with a strange new charm,—the melody of church bells, a melody "which the air had strained, and which had conversed with every leaf and needle of the wood," the rumbling of wagons over bridges, the whistle and roar of the locomotive on the Fitchburg railroad. "On gala days the town fires its great guns, which echo like pop-guns to these woods, and some waifs of martial music occasionally penetrate thus far. To me, away there in my beanfield at the other end of the town,* the big guns sounded as if a puff-ball had burst; and when there was a military turnout of which I was ignorant, I have sometimes had a vague sense all the day of some sort of itching and disease in the horizon as if some eruption would break out there soon, either scarlatina or canker-rash, until at length some more favorable puff of wind, making haste over the fields and up the Wayland road, brought me information of the 'trainers.' It seemed by the distant hum as if somebody's bees had swarmed, and that the neighbors, according to Virgil's advice, by a faint *tintinnabulum* upon the most sonorous of their domestic utensils, were endeavoring to call them down into the hive again. And when the sound died quite away, and the most favorable breezes told no tale, I knew that they had got the last drone of them safely into the Middlesex hive, and that now their minds were bent on the honey with which it was smeared."

But although these faint intimations from the world of men were not without charm, he was happiest when wholly absorbed in his immediate surroundings. Walden Pond was a perennial source of delight to him. He bathed in it, fished in it, surveyed it, sounded it "to recover its lost bottom," observed its mysterious rise and fall, and watched its endless variety of mood in light and shadow, calm and storm. "It is a clear and deep green well, half a mile long, and a mile and three quarters in circumference, without any visible inlet or outlet except the clouds and evaporation. The surrounding hills rise abruptly from the water. They are exclusively woodland. Walden is blue at one time and green at another, even from the same point of view. Lying between the earth and the heavens, it partakes

* Township.

of the color of both. It is a soothing employment on one of those fine days in the fall, when the warmth of the sun is fully appreciated, to sit on a stump on such a height as this, and study the dimpling circles which are incessantly described on its otherwise invisible surface amid the reflected skies and trees. It is a mirror which no stone can crack, whose quick-silver will never wear off, whose gilding Nature continually repairs; no storms, no dust can dim its surface ever fresh; a mirror in which all impurity presented to it sinks, swept and dusted by the sun's hazy brush; which retains no breath that is breathed on it, but sends its own to float as clouds high above its surface and be reflected in its bosom still."

The neighboring woods, too, yielded up their secrets. Many a day this devout worshipper of Pan and the nymphs threaded their recesses, lighting on new treasures, or revisiting well-known spots which had become dear as old friends. "Sometimes I rambled to pine groves, standing like temples, or like fleets at sea, full-rigged, with wavy boughs, and rippling with light, so soft and green and shady, that the Druids would have forsaken their oaks to worship in them; or to the cedar woods beyond Flint's Pond, where the trees, covered with heavy blue berries, spiring higher and higher, are fit to stand before Valhalla, and the creeping juniper covers the ground with wreaths full of fruit; or to swamps where the usnea lichen hangs in festoons from the white spruce trees, and toad-stools, round tables of the swamp gods, cover the ground, and more beautiful fungi adorn the stumps, like butterflies or shells, vegetable winkles; where the swamp-pink and dogwood grow, the red alder-berry glows like eyes of imps, the waxwork grooves and crushes the hardest woods in the folds, and the wild holly-berries make the beholder forget his home with their beauty, and he is dazzled and tempted by nameless other wild forbidden fruits, too fair for mortal taste."

Thoreau was, of course, often asked if he did not feel lonely. Like a true disciple of Emerson, he replies, "This whole earth is but a point in space. How far apart, think you, dwell the two most distant inhabitants of yonder star, the breadth of whose disc cannot be appreciated by our instruments? Why should I feel lonely? Is not our planet in the Milky Way? What sort of space is that which separates a man from his fellows and makes him solitary? I have found that no exertion of the legs can bring two minds much nearer to one another. What do we want most to dwell near to? Not to the depot, the post-office, the bar-room, the meeting house, the school house, the grocery, where men most congregate, but to the perennial source of our life, whence in all our experience we have found that to issue. Society is commonly too cheap. We meet at meals three

times a day, and give each other a new taste of that musty old cheese we are. The value of a man is not in his skin, that we should touch him." As people make so much of company and visitors, he tells them that Nature is his neighbor, or rather neighbors, for he distinguishes two aspects, masculine and feminine; on the one hand force, on the other nurturing care. He speaks of the former as "an old settler and original proprietor who is reported to have dug Walden Pond, and stoned it, and fringed it with pine woods; who tells me stories of old time and of new eternity; a most wise and humorous friend." Of the other he says: "An elderly dame, too, dwells in my neighborhood, invisible to most persons, in whose odorous herb garden I love to stroll sometimes, gathering simples and listening to her fables. A ruddy and lusty old dame, who delights in all weathers and seasons, and is likely to outlive all her children yet."

He was on intimate terms with the wild creatures, and describes their habits with delightful simplicity and humor. He tells of a wood-mouse which became so friendly as to scamper over him, and eat from his hand. In winter the squirrels came for the half-ripe ears of corn which he had thrown out on the snow. "One would approach at first warily through the shrub-oaks, running over the snow crust by fits and starts like a leaf blown by the wind, now a few paces this way, with wonderful speed and waste of energy, making inconceivable haste with his 'trotters,' as if it were for a wager, and now as many paces that way, but never getting on more than half a rod at a time; and then suddenly pausing with a ludicrous expression and a gratuitous somerset, wasting more time in delay and circumspection than would have sufficed to walk the whole distance; and then, before you could say Jack Robinson, he would be up at the top of a young pitch-pine, winding up his clock, soliloquizing and talking to the whole universe at the same time—for no reason that I could ever detect, or he himself was aware of, I suspect. At length he would reach the corn, and selecting a suitable ear, brisk about in the same uncertain trigonometrical way to the top of my wood-pile, before my window, where he looked me in the face, and there sit for hours, supplying himself with a new ear from time to time. Sometimes the ear which was held balanced over a stick by one paw, slipped from his careless grasp and fell to the ground, when he would look over at it with a ludicrous expression of uncertainty, as if suspecting that it had life, with a mind not made up whether to get it again, or a new one, or be off; now thinking of corn, then listening to hear what was in the wind. So the little impudent fellow would waste many an ear in a forenoon; till at last, seizing some longer and plumper one, considerably bigger than himself, and skilfully balancing it, he would set

out with it to the woods, like a tiger with a buffalo, by the same zig-zag course and frequent pauses, scratching along with it as if it were too heavy for him, and falling all the while, making its fall a diagonal between a perpendicular and a horizontal, being determined to put it through at any rate;—a singularly frivolous and whimsical fellow.”

As for human visitors, “they were winnowed by my mere distance from town. Fewer came to see me on trivial business.”

Still he had a good many callers who did not exactly please him: would-be philosophers and reformers, each with a “Morrison’s Pill” for the ills of the world; mere curious busybodies who gossiped about the “queer” hermit’s establishment, men of business, who pretended that they loved to walk in the woods, but were evidently uneasy and preoccupied, and thinking of “the great distance at which I dwelt from something or other.” On the other hand he was glad to see children and young women, fresh, unspoiled natures, persons who really saw Walden Pond, and the pines and birds and flowers. Fishermen and hunters, too, steeped in forest-lore, and ready to impart it, were sure of a welcome.

He made the acquaintance of a sturdy young French-Canadian woodchopper. “He interested me because he was so quiet and solitary and so happy withal; a well of good humor and contentment which overflowed at his eyes. His mirth was without alloy. Sometimes I saw him at his work in the woods, felling trees, and he would greet me with a laugh of inexpressible satisfaction, and a salutation in Canadian French, though he spoke English as well. When I approached him he would suspend his work, and with half-suppressed mirth lie along the trunk of a pine which he had felled, and peeling off the inner bark, roll it up in a ball and chew it while he laughed and talked. Such an exuberance of animal spirits had he that he sometimes tumbled down and rolled on the ground with laughter at anything that made him think and tickled him. To a stranger he appeared to know nothing of things in general; yet I sometimes saw in him a man whom I had not seen before. I loved to sound him on the various reforms of the day, and he never failed to look at them in the most simple and practical light. When I asked him if he could do without money, he showed the convenience of money in such a way as to suggest and coincide with the most philosophical accounts of the origin of this institution, and the very derivation of the word *pecunia*. He would defend many institutions better than many philosophers, because, in describing them as they concerned him, he gave the true reason for their prevalence, and speculation had not suggested to him any other. At another time, hearing Plato’s definition of a man—a biped, without feathers—and that one exhibited a cock plucked and

called it Plato's man, he thought it an important difference that the *knees* bent the wrong way."

His old friends, Emerson, Channing and Alcott, of course, did not fail to visit him often. Of Channing's visits he says: "The one who came farthest to my lodge, through deepest snows and most dismal tempests, was a poet. A farmer, a hunter, a soldier, a reporter, even a philosopher, may be daunted; but nothing can deter a poet, for he is actuated by pure love. We made that small house ring with boisterous mirth and resound with the murmur of much sober talk making amends to Walden vale for the long silences. Broadway was still and deserted in comparison. At suitable intervals there were regular salutes of laughter, which might have been referred indifferently to the last-uttered or the forth-coming jest." Of Alcott, he says: "A true friend of man: almost the only friend of human progress. I think he should keep a caravansary on the world's highway, where philosophers of all nations might put up, and on his sign should be printed: 'Entertainment for man, but not for his beast. Enter ye that have leisure and a quiet mind, who earnestly seek the right road.' Great Looker! Great Expecter! to converse with whom was a New England Night's Entertainment. Ah! such discourse we had, hermit and philosopher, and the old settler I have spoken of,—we three,—it expanded and racked my little house."

After a little over two years at Walden, Thoreau returned to the world, not with any feeling of failure, but rather satisfaction, as of one who had proved his position. Probably his chief reason for giving up his hermit life was that he was so determined to be free, that he feared to be bound to any particular sort of freedom. Hoeing his beans was a rare amusement, but there was danger that it might, "if continued too long, become a dissipation." There were other lives to live, and he would not rob them of precious days, for the sake of one of which he had already extracted the kernel. He had satisfied himself that when once a man sets forward resolutely to live his vision, the lions in the way will turn out to be mere paint and paste-board, that all the forces of the universe will be for him, and that he will succeed in a sense deeper than the man of the world can conceive.

Thoreau's book, "Walden; or Life in the Woods," appeared about seven years later. It exhibits him in two main aspects—a critic of society, and an observer of nature. When he deals with man, he reflects the thought of Emerson, not as a mere imitator, but as one imbued with the very spirit of the sage of Concord. There is the same passion for contemplation, the same mystic enthusiasm. They were men in whom "we seek vainly a system of philosophy with principles coherent, interdependent, subordinate, and deriva-

tive." It no doubt seemed to them that such systems were constructed largely out of worthless distinctions corresponding to realities that were not realities. These two men did not represent a system, but rather an attitude to life, an attitude of simplicity, universal sympathy, invincible optimism. In the case of Thoreau this optimism swallows up the not very obvious but quite real melancholy of his temperament, and as shown in the passage about the "trainers" already quoted, enables him to look on smilingly at the jingo delirium of his time. Both Emerson and Thoreau are characterized by a sort of Hindoo detachment, very different from Carlyle's desperation and ferocious Titanic energy, his intense awareness of infinite terrors and abysses. The manner, too, of Thoreau's deliverances is largely borrowed from Emerson—lofty, oracular, allusive, with a tendency to epigrammatic brevity and point. He frequently makes a fine use of allegory, as in the passage about trade with the Celestial Empire. He often glides into it before the reader is aware, or conceals it dexterously, with a mischievous smile, we may fancy, at those somnolent minds which will take his words literally, and in no other way. The passage about the "trainers" is a good example of the combination of literal and figurative, and, in fact, the whole account of his life at Walden is as much a parable as a history. He delights in taking some familiar maxim, some old hackneyed phrase or proverb, and giving it a new turn or profounder meaning. "If you have built castles in the air, your work need not be lost: that is where they should be. Now put the foundations under them." "Entertainment for man, but *not for his beast*." "If you should ever be betrayed into any of these philanthropies do not let your left hand know what your right hand does, for it is not worth knowing." "A man sits as many risks as he runs."

While his reflections on society are interesting and valuable, it is in his descriptions of nature that we find his most original work. He captures the very soul of the pine-tree and lake. Even passages of what might seem mere detail, have a fine simplicity and grace, while here and there are glimpses of universal meaning shining through the transitory and local. Every chapter is full of a sense of breezy, outdoor life. He looks at things, not from the point of view represented by a \$10,000 yacht and a sham castle on an island, but almost with the rapt gaze of Wordsworth himself. The contact with Nature is direct and living; his soul is always on the watch for divine visitations, seeking to rise to higher states of feeling.

After Emerson, and perhaps Hawthorne, Thoreau is the greatest of those fine spirits who represent in America the cause of the soul's freedom, whose work has been to widen our sympathies, give us eyes,

and act as a tonic to our better nature. Lowell's estimate of him in "My Study Windows," is grotesquely inadequate. He devotes pages to his foibles, and to some he never had, and clauses to his rare and genuine excellences. The best one can say for the essay in question is, that it is not as bad as the "Carlyle." It is enough, and more than enough to quote in reply the words of Emerson: "A truth-speaker he, capable of the most deep and strict conversation; a physician to the wounds of any soul, a friend, knowing not only the secret of friendship, but almost worshipped by those few persons who resorted to him as their confessor and prophet, and knew the deep value of his mind and great heart. His soul was made for the noblest society; he had in a short life exhausted the capabilities of this world; wherever there is knowledge, wherever there is virtue, wherever there is beauty, he will find a home."

JAMES DUFF.

IN THE WEST INDIES.

SABA.

HERE is Saba, a huge mountain rising precipitously out of the ocean depth and narrowing as it ascends, till at last above a wreath of silvery cloud it shows its broken cone. Over the rim of the crater, and down its sides, for a thousand feet, lies the dark foliage of forest, ending in fringes of steep ravines dense with shrub and fresh with mountain runnel; and then great sweeps of green declivities, leading to abrupt gigantic walls of snowy rock, or hills that run upward in wild confusion, and then throw themselves headlong over the purple sea. All around the massive rock, the sea without a shore, dashes up its roaring billows. Only one inlet for a row-boat between the fissures of a huge descending rib, affords a landing. and from it stretches a tortuous path or ladder nine hundred feet up the brown and greeny steps and shaggy forest, then over a gritty hump, and down, when lo! a plateau of beauty in the centre of an ampitheatre of woody mountains a thousand feet high, and in the midst the peaceful and happy homes of two thousand human beings. It is the town of St. John, built in the very crater of the extinct volcano, and safely sheltered by its walls from the furious hurricanes. and shaded from a fiercely blazing sun by the ever-hovering clouds. How strange the scene! The white houses with their red roofs. green jalousies, and neat verandahs covered with rambling convolvulus of gorgeous colours; the gardens with hedges of scarlet hibiscus; the daily busy life of market, school and store, and social duty: and the church in the heart of all, from which ascends to the God of the universe, the God of the solitary little island, the praise and prayers of earnest worshippers in which are specially remembered Saba, their native land, and Wilhelmina, of far-away Holland, their gracious queen—all in what was the seething abyss of molten rock. belching its flames into the heavens, and rolling its lava tide down into the watery depth.

Yet solitary as this rocky island seems and singular, even she contributes to the life and work of the great bustling world beyond. Her hardy sons, in splendid schooners of their own building, scour the West Indian seas, or bent on pursuits carried on ashore, stray to the mighty continents east and west and play their part in the drama of rushing life, but when done, ever to return, with a competence, or without, to their secluded and beloved home in the lofty rocky height. Patriots even there! Outside this airy city, and from the windward side, the islands of Anguilla and St. Martin's are seen in dim outline

to the left, and St. Kitt's and Nevis, more clearly to the right, while in full sight, and in the centre rises the island of St. Eustatius.

MARTINIQUE—*St. Pierre as it was.*

St. Pierre is prettily situated at the head of a large and beautiful bay, with a background of heights of various forms, some yellow and green with crops, and some in the dark green of the forest, while above them rise the volcanic mountains, vast and sombre, with shrouded summits. On the face of the hills there are well-made winding roads, from which magnificent views of ocean and of island scenery are had, and refreshing breezes are felt. Terrace upon terrace the city rises with flights of stone stairs leading off in all directions and in the most intricate fashion into queer little squares of courts, where the houses are almost hidden in masses of purple, and vermillion, and blue, and over all the majestic palms. Down both sides of the streets, and every alley and court, are rushing the limpid waters from the mountains, cooling the air, and imparting to every corner the appearance of cleanliness, and then close to the barracks and a line of beautiful villas literally clothed with flowers over the very roof, and near to a magnificent grove of tamarinds, is a wide, rushing stream, in which dozens of dusky women up to the waist are washing clothes and slapping them on the boulders in the most frantic manner, while they drown the noise of the river, and fill the neighborhood with their clanking voices. Amid the tamarinds stands an elegant monument of stone commemorative of the great revolution of 1789, erected on its centenary, and bearing on one side the inscription, "*Ceperunt cives libertatem 1789,*" and on the other, "*Nepotes gloriæ avorum 1889.*" All the essentials to French existence are here—restaurants with perfect cuisine; music gardens and theatres, military pomp and parade; fetes and balls; a perpetual high carnival. For the devout there is the Roman Church, the only Church allowed on the island, which thrusts herself on one's notice at every turn, whether in the streets with their niches for images with burning lamps before them, and their religious houses of one sort or another; or up the mountain side with the cross at every twist of the road; or in the form of terribly realistic plaster casts representing the stages of the cross leading to a revolting imitation of the crucifixion. This as it was.

ST. PIERRE AS IT IS.

The city of beauty, business and gayety is no more. The gardens of delight, the homes of luxury, and the halls of festal joy are buried heaps. The forty thousand mortals that gave it life are beneath the lava flood, that with irresistible speed and power rushed from the mighty mountain mass hard by. Nothing of all its life and

loveliness remains. Dust and scoria and petrified lava, all! Over its wharfage, market, promenade, the ocean tosses; and the boiling, blazing mountain, still looks down in fiery fury, rumbling its threatenings, and ever and anon rolling destruction and death in all directions. Suddenly the awful change came; suddenly but not without warning. "Escape for thy life" might have been heard, yet none escaped, save one declared by human tribunal an unrighteous man, and lying, a criminal, in prison cell. On the last morning of its life the city woke in doubt, anxiety and fear. The people rushed to the long neglected Holy Sacrament, and the worship of a long abandoned God, but even while their eye was turned towards Him, and the cry for deliverance was on their lips, death seized priests and people alike, turning the sanctuary into a charnel house, the cathedral and city into an eternal waste, and vault of dead men's bones and rotteness. Yet in the awfulness of the havoc, the ghastliness of the scene, the sublimity of destructive power, we seem to see the presence of the Holy, and to hear the sigh of the Merciful. What the lesson?

CHACACHACARE.

The entrance into the Parian Gulf from the Caribbean Sea is through a series of channels, deep and narrow, called Bocas, or mouths, which divide into several islands a long peninsula stretching westward from the north shore of Trinidad. Chacachacare is the largest of these islands, and the last looking across to Venezuela, close at hand. It consists of ranges of hills about 600 feet high, greeny and abruptly dropping into the sea, leaving here and there at considerable distance from each other, sandy bays with cocoanut trees and valleys quickly narrowing as they run up the hillsides. In these bays there is nearly always a summer cottage, or I should say sea cottage, for it is always summer in these regions, and away from the cottage, thinly scattered negro cabins. The village of Chacachacare, situated on one of these bays, has about thirty houses planted anywhere, made of wattle, with roof of palm trees; or of mud covered with zinc. The schoolhouse alone is made of wood, and playing around it are many children, most of them clothed in rags, having one garment, and some having none. Opposite the village, but on the other side of the bay—La Tinta Bay—is the Church, a neat Roman Catholic frame building. On pursuing the circular road to it from the village we discover that the island is almost divided into two by a sixth Boca. We come to a narrow neck of sand, on the north side of which is the Spanish Main, and on the south side the Parian Gulf, and right between is a cottage of concrete from which one can throw a stone into either sea. Cocoanut trees give shade and delic-

iously cool drinks, and immediately to the right and left rise steep, lofty hills, covered with cacti, great trees, and underneath them huge century plants. This is our home for a few days. At the north door is a crescent stretch of white sand and high rocky bluff at each horn. That on the right is bright red with streaks of gray and perfectly bare till the greeny rounded head is reached. That on the left is a huge mass of grey, shining like a mountain of silver, dotted with clumps of century plants and crowned with tree cacti. Before touching the water it suddely splits and throws out a rocky islet, black with white lines of quartz. Round it the pelicans are ever wheeling, making swallowy detours of the bay, quickly descending with a great splash into the water, seizing their prey, and up again on unwearied wing. The water seems teeming with fish; we see them leaping gleefully into the air; but their number will be smaller ere the sun goes down, for the fisherman comes round in his little boat for the wicker prisons sunk early in the day, and tumbles out upon a pile of pebbles the finny captives of marvellous colours, mullet and king, and champion, and others as he choses to name them, beautiful in life, gold and silver, and black and green, and spotted, the very thing for an aquarium, but with another destiny in store for them.

What a glorious sunset! Now the great orb that has been fiercely blazing all day, is hurriedly departing behind the lofty peaks and rounds of the Venezuelan mountains. A circle of fire he seems in a yellow plane, dissolving into the softest loveliest blue, then into bands of brightest red, and cloudy masses of silver grey and black, changing into every variety of form and shade of colour, till blackness conquers and darkness, dense darkness, covers land and sea. Then over mountain sides and through the surrounding foliage, myriads of fire flies rush forth as at a wizard's call, and flash hither and thither over all, and through all, their brilliant scintillations, as if the place had become the frontier of that glorious dome above, with the plough right overhead and the southern cross in the horizon, and the stars and planets thickly strewn, of marvellous size and lustre.

But the sunset is not always so. Last night there came rushing round the precipitous height and pelican isle, a huge cloud, black as night and thick, which spread itself over the whole main like a funeral pall. Then gathering itself up it settled on the mountain tops, and down over all, completely blotting out the grandeur of the departing sun, and rapidly throwing blackest night over the whole landscape. We hasten within the cottage between the two seas, behind, before, and the two mountains, right and left. The wind has risen from a breeze to a gale; from a gale to what seems to us foreigners, a hurricane. All night through it madly raged. The oceans on both sides

rolled up their waters and dashed them on the rocks and sands with terrifying roar and hiss. The rain descended, not in drops but in oceans, and with a noise that mingling with the rage of seas and the awful howl and rush of wind, filled with fear the puny mortal lying in stillness and sleeplessness.

In the morning all was peace and sunshine. No trace of storm was visible, save a pool here and there in rocky hollows, and tanks and cisterns overflowing with heaven's precious boon. Dinah, the nearest cottager, is abroad, tall and stately, black as ebony, with a pipe in her mouth, and a bottle on her head, with yellowy green bodice and skirt bunched around her, ending midway in rags and tatters, over a snowy petticoat stiffened with starch and surrounded with countless tucks and rows of insertion, and ending with inky ankles and feet, massive and flat. She has come with milk for early coffee, and will linger till she is seen, and sees.

TRINIDAD; THE BOTANICAL GARDENS.

Once more, after many years of imperishable memories, we find ourselves in this marvellous tropical paradise, revelling in the richness of its luxuriance and gorgeous grandeur. No tongue or pen can describe this perfect wonderland. One feels as if on enchanted ground, where all things, even the grass beneath one's feet, have been changed from the ordinary into the extraordinary, not merely into what we have read or heard of, but what our liveliest imaginations have never conjured up.

Here is an avenue of palms whose plumes of forty or fifty feet are playing with each other one hundred and thirty feet overhead, and whose trunks are like massive pillars of silver leading up to the palace of some wizard prince. There, is a green savannah, every inch of which is shadowed with the far-stretching leafy boughs of a single majestic saman. Here, are lines of ceibas, running up from the ground like mountain ranges, into trunks of mammoth girth, and hurling into the air their ponderous branches, brilliant with the colouring of a thousand parasites. There, are the fantasticalities of floral development, countless orchids, vying with each other in the grotesqueness of their form, and brilliancy of their hue, leaping out of the vegetable into the animal world, like bees and butterflies, and lizards, and swans, and doves, and eagles, yea! even like human beings, arrayed as for a fairy carnival; and some huge, ugly and uncanny looking, carrying trap-like sacks for living creatures, their favourite food. Here, issuing from the earth are piles of cordage, which twist and twine themselves into large cables, tighten their coils around the titanic trunk, loop them loosely over the lower boughs, and touch-

ing the sward in festoons, swing themselves aloft higher and hither and thither, till, like a Samson, the giant of the forest is bound fast and firm. There, are trees laden with curious fruit, invisible to the eye on stem, or branch, or twig, or leaf, but visible when you search the ground, clustering on vines that trail along the grass, far as the shadow of the farthest bough. Here, are large groups of fan palms, or "The Traveller's Joy," twenty, thirty feet high, whose every frond has a deep draught of clear, cool water for the weary pilgrim in a dry and thirsty land; and there, is the ivory palm bearing its fruit at the base of the trunk, great fibrous excrescences, swollen with a hard and white material that supplies the world with buttons, and handles for sun-shades and umbrellas. But at every step there is something that excites curiosity, and increases knowledge. Snap these dry twigs and smell; it is the camphor tree. Bark that one and taste; it is the cinnamon. Slit that one and see the thick milky juice flowing, curdling and stiffening; it is the India rubber tree. Look at that hedge of shrubs flowering like myrtles, snow-white corollas with bunches of golden stamens; they are tea plants. Look on the other side at that clump of bushes, with dark, smooth-pointed leaves, and green berries thickly strewn on every twig: they are young coffee trees. And what are these small trees with shining leathery leaves and clusters of buds like nails? They are cloves. But look! there are rows upon rows of aloes, lign-aloes and bitter; taste if you doubt and you will have the evidence of your senses the rest of the day, and mayhap to-morrow. But now we have entered a grove of nutmeg trees. The foliage is dense, dark green above and auburn beneath. The fruit is hanging like chestnuts; the ground is strewn with mahogany kernels, burst from rich orange shells, and wrapped in an arillus of fiery red, afterwards changing to yellow, and known as mace. But the shade is deepening as we descend, and the gurgling of water is heard, and suddenly the whole world of ferns and mosses opens out before us; treasures in every crook and cranny, and fissure, and crevice, through the ravine and up the banks, on every stone and fallen bough—the whole costly outpourings of a million conservatories in one vast, wild, bewitching mass! Then we emerge into the sunshine, and find ourselves in a curving pathway lined with crotons of infinite blendings, old gold and crimson, creamy white and scarlet, purplish pink and grey, bronzy red and yellowy green, maroon deepening to dense black, every shade of every colour and combination, indescribable gorgeously. Lingering, stopping at almost every step, we come to copses as sweet as English hawthorne, or apple blossom, orange trees in flower, and yet covered with fruit, green, canary, and rich yellow balls, and here in the midst of a closely shaven lawn a

spraying fountain with pond of lotus plants throwing up from thin, large green leaves, magnificent spikes of unrivalled pencilling and splendour. Oh! those exquisite gardens. Their recollection is a joy forever. We are at the exit, and under the shade of a Bread Fruit tree the carriage is waiting. A magnificent tree it is, high as an old chestnut, and still more umbrageous, with leaves large dark green and beautifully glossy, as if newly varnished. The fruit is hanging thickly from every twig, large as musk melons, round and rough, some green, some yellowing to ripeness. We call to mind the strange historic tale of the "*Bounty*" and Byron's "*Island*," and recite the beautiful passage as an apostrophe to the noble specimen before us :

The Bread-fruit tree, which without plough-share yields
The unreaped harvest of unfurrowed fields
And bakes its unadulterated loaves
Without a furnace, in unpurchased groves ;
And flings off famine from its fertile breast—
A priceless market for the gathering guest."

We make our salaam, and are off to the

BLUE BASIN.

The road hard and as if newly swept, at first curves through a broad savannah studded with lofty feathery palms, and then through a wide valley that sweeps from the wooded hills down to the waves of the Parian Gulf. Saw you ever such trees as these? There is an avenue of gigantic samans with trunks like British oaks, centuries old, and huge, outstretching boughs that seem like banks of vegetation, so altogether clothed are they with parasitical plants, staring at you from their greeny heights with eyes of fiery red, brilliant vermilion, burnished gold, and captivating blue. But, look! there, is a tree that has begun to make a forest. The rough and twisted trunk, rising no very considerable height, although to the eye it may be lessened by the width, throws up and out its boughs of luxuriant foliage that effectually shuts out the burning ray; and from these boughs, as from the joints of a vine, or tradescantia, bunches of roots strike out and downwards, hanging in great shaggy masses, and growing till they touch the ground. Then, curious to notice, tipped with a hard sharp-pointed case, these dangling creepers penetrate the soil, however hard, take root, and turn the fibrous clusters into sturdy trunks. It is the famous Banyan tree, which is thus spreading into a forest, if allowed. of indescribable weirdness and baffling intricacy. Wondering, we gaze at it and try to recall the graphic description of it from the pen of Milton, but we are attracted to something new and interesting to note. Meeting us on the road is a Hindu, a man of medium height,

sorrowful look, light copper colour, with a sprinkling of black freckles over his nose, arrayed in white turban, white tunic, white trousers down to the knee, thin bare legs, bare feet. His step is light and quick, and his carriage erect and dignified. About three yards behind him is his wife, of small size and coppery complexion and gentle expression; the hair is black and straight, and the parting is painted red. One piece of light blue muslin, skilfully arranged, envelopes the figure, serving as hat, costume, and mantle. The neck and arms and feet are bare. Across the forehead is a band of gold coins with small gold bells between; in her ears are rings of thick gold wire as large as bangles; on the sides of her nostrils are flat circular pieces of gold in filigree work and through her nose is a ring; round her neck are strings of silver coins, and her arms and wrists and ankles are hooped with silver. She is her husband's banking house, and manifestly conscious of his treasure he walks along, holding no conversation with her, but in silence keeping step and the same distance apart. Further on, we pass a number of men in full dress, consisting of a white handkerchief around their heads, and another around their loins, busy in the construction of a bridge. The women are the labourers, carrying baskets on their heads, instead of hods on their shoulders. There, is a little girl, brown as a nut, covered with rings of gold and silver, carrying a large pitcher of water, beautifully poised on her head, and never requiring the slightest touch of the hands, that are regaling with mango the neat little woman. And there, is an old negress gathering up the remnants of a tree that has been cut down and, can you believe it? breaking the branches, thick as a man's wrist, not across the knee as we should, but actually across her skull. Here, is a large circular building of mud, with here and there painted in red and blue, cabalistic letters and figures, and everywhere splattered with cow-manure. Through the wide entrance we can see, as we slowly pass, men here and there seated on the ground, with their legs drawn under them, and some of them with their legs drawn straight in front of them, but whether they are praying or lost in a reverie, or listening to the story-teller, we cannot say.

Now we are on a beautiful country road, with a grove of coconut trees on the left beyond which the waves are breaking with a drowsy murmuring on a pebbly beach, and on the right stretch acres of yellowing sugar cane with now and again a group of palms and huge trees in gorgeous array, the setting of the planter's villa. Beyond are the heights of sable green, and over them is the azure vault of heaven. Gradually, we get nearer and nearer, and at last, by a sharp detour, we are borne into a wealth of foliage and a scene of

ever-increasing beauty, grandeur, enchantment. Leaving our carriage, we advance slowly; we can hardly advance at all. It is simply fairyland. A cantering brook has suddenly rested at our feet in a series of pools fringed with long polypodiums, and dotted with islets of tree-ferns. Curious looking flowers are flaunting their brilliant colours from hollows in the green banks, that quickly rise to a towering background of rock and cacao-trees and bois-immortelles; the thick shadows of the ceibas on the green grass underneath interspersed with all kinds of bulbous beauties and broken here and there with golden beams of sunlight. Along the huge trunks, and winding along the far out-stretching limbs, is the aristolochia or Dutchman's pipe, every leaf as large as a Roman shield, fighting for possession with a thousand climbers that throw themselves everywhere and down in clustering heaps, and tassels of flaming dyes. A goat with its kid is browsing on the grassy zig-zag path, which as yet is level, and a little negro cabin, half hidden in orange trees, surrounded with a hedge of hibiscus, all aglow with crimson and snow-white, pink and creamy blossoms, with its mistress at the gate, with ebony face and bright coloured turban, completes a picture that can never fade away. But the path leads suddenly upwards, and the back has to be bent to the brae, and the handkerchiefs are in continual requisition. The beginning, however, is the worst, and with gradual ascent we slowly pass the continuous rockery on our left, abounding in all kinds of ferns, golden and silvery, and the rare filmy in masses, and the maiden-hair in countless varieties; and on the right the abrupt descent to the ravine, from which rises through the thick foliage of forest trees and shrubbery, the roar of rushing water. And now the Blue Basin is reached; a large circular sheet of water, blue as the intensely blue heavens looking down upon it. Perpendicular cliffs, with here and there emerald patches and over-arching greenery, form three-fourths of its circumference; and from the topmost height, cascading waters of silvery sheen and snowy whiteness, blown ever and anon into opalescent spray, impart a coolness to the atmosphere, while their voices lull the pilgrim spirit into the deep sweet restfulness of Elysium.

TOBAGO; THE HIGH WOODS.

In Tobago, the island of Robinson Crusoe, and with all the fascination and faith of early days, the thrilling classic of every boy, has again been read. There is something intensely exciting and exhilarating in approaching a land rarely frequented by tourist, with depths and heights, and stretches of unexplored and untold grandeur, the scene of undying romantic story. From Scarborough,

its little lovely capital growing from the silvery, sandy shore, up greeny heights surmounted by frowning battlements from which the Union Jack is waving, we proceed by a constantly winding ascending road, lined with tamarind and bread-fruit trees and endless varieties of palms, to Government House. The warden, or deputy governor, the nephew of our genial friend and companion, the Professor of Physics at Queen's, a fellow graduate of Edinburgh University, and withal of Scottish birth, gives us a welcome of unmistakable ring to his palatial dwelling and magnificent kingdom. Nor he alone, but the lady by his side also, receives the travellers from afar, with a heartiness breathing of home, and a lavish kindness that never can fade from my memory. From the wide verandah with central alcove, that stretches some seventy feet on the drawing-room side of the house, we look out on the ravishing scene. From masses of gorgeous colour beside us, and an air laden with subtle delicious perfume, there stretches through valleys and uplands and hills, away to the glittering ocean, a panorama of richest tropical beauty throwing its mystic influence over one, and creating the uncontrollable desire to rush into its hidden depths and penetrate its bewitching mysteries. Enchanted, we hear a voice behind us, saying: "You shall see grander things than these," and grander things than these we most assuredly saw before we left this earthly paradise. And though no embargo was laid upon our spirits, to disclose aught that the eye saw and the ear heard, yet utterly powerless do we feel ourselves to give the faintest accurate idea of the glory of the land. Nevertheless, let vain ambition try.

It is early morning and the day is doubtful, but dusky sturdy messengers have long since departed with boxes, bags, portmanteaus. on their heads, our *impedimenta* on the projected invasion of the high woods, through paths just opened up, never yet trodden by stranger foot, or native, save that of the brave, laborious maker. The horses are at the gate; in a trice we are in the saddle and off. At first we slowly wend our way through meadows, gay with amaryllis and nameless beauties, then through copses of fluttering bananas, and a wild profusion of limes, almonds, and orange trees in blossom. till we reach a magnificent bay, of hard white sand and loud resounding billows, along which, as if by sudden inspiration, we rush like the hurricane. Then forward by a tortuous route, round about great gulches full of cacao trees and palms, then by narrow paths round precipices, then down through plantations of cocoanut trees and negro villages, at one time buried in deepest valley with nought but everlasting foliage around and the blue heavens far off, and at another time on a bare majestic bluff, thousands of feet high, with the lonely Atlantic

ocean struggling with cloven rocks beneath and sweeping away to the distant horizon. Through scenes like these we reach at close of day the Rest-House in a negro village. It is a small plain of coconut trees, with long crooked trunks and feathery tufts rising out of plantains and bananas sheltering palm-thatched cabins in thick disorder. The high waves are dashing outside our windows; a boat lies near high, with the name "J. Crusoe"; a yellow radiance is over all; then sudden darkness.

We are now in a great winding valley of rubber trees, a plantation of thousands and thousands of various kinds, about to bring handsome returns to the patient industrious owners. Then up the hill sides are groves of cacao throwing out from barky trunks and branches pods large as cucumbers, ribbed, green and bronze, and yellow, and red; and beyond them, clothing hills above hills, and mountain peaks and rounds, forests of bamboo, cedar, mahogany, locust, logwood and palm. Eight times over have we forded a river. now narrowing and rushing with deafening noise through thwarting boulders; now through deep dark beds, fringed and almost hidden with fluttering fronds and fiery stems of bloom—and again widening out into little lakes, peaceful and cool under the high overarching leafy boughs. Climbing by rocky and winding tracks the wooded heights, we emerge into the sunny open, to descend through acres of sugar cane, tall and green as Canadian corn. Many and merry are the voices mingling with the clash of the cutlas as the busy descendants of two hundred slaves that used to do and endure on these very scenes, cut down, gather up, and bear away on the lazy bullocks, the succulent stems to the mill hard by. We halt and receive a hearty Indian welcome—we are not unexpected, and all things are ready; so we rest in human kindness and rich abundance; we rest and are thankful. So, too, we believe, do the hardy, willing steeds, which the grooms have led off to shade and water and provender. But the journey is not yet done. Rest and refreshment are for further pursuit, and soon up the usual labyrinthine track, by towering rocks threatening to fall before we pass, and across streams tumbling from fearful heights and washing away the narrow ledge by which in single file we cautiously advance, we reach a summit two thousand feet above the sea. The view is superb. The deep descent of rich vegetation widening out into valley of cane and cacao, with here and there on vantage points neatly constructed cottages; and the village with its church and steeple half hidden in the grove of coconut trees, and beyond a magnificent land-locked bay, and further beyond the mighty ocean, make a picture of beauty and grandeur, peace and rest, that not merely the eye but the soul would behold forever. Zig-zag for miles

we slowly descend and land at the Rest-house of cedar close to the shore. Cutlas in mouth, a dark urchin runs up, like a monkey, a cocoanut tree, and a thirst which we thought unquenchable, is speedily relieved by the deep, delicious draught.

With the dawn we are all in the saddle, a party of five, and the ascent of the high woods is at once begun. Through twenty or thirty miles we defile through scenery of the wildest, grandest description, without a break of the tame, or common, through awful gullies of palmiste; through lanes of rock like upright meadows of fern dripping the clouds of heaven; underneath ponderous boughs of forest giants, throwing from their lofty heights thousands of cables, twisting cords, and lines, darkening the air, blocking the way; across roaring floods that tear the rocks from under them and madly dash down the deep ravines of gloom and foliage; up banks and humps of rock that at the foot seem inaccessible; through park-like scenes of monster towering palms, turpentine trees, and countless others of tremendous girth and overwhelming height; then resting on summit after summit, in the clear light of bluest sky, and the cooling breeze of ocean, with a world of wealth and beauty and stillness all around: then dashing into the dark woods again, up the ascents and down the hollows, with now the shout from the foremost horseman: "Look out; land slip"; "keep to the left—huge hole"; "see that enormous snake"; and then the loud chattering of whole colonies of parrots, flying fast and high, in terror of the invader. Through scenes like these we slowly wend our way over the great watershed of the island travelling from east to west, and landing before the sun went gorgeously down into the ocean waves, in a Rest-house of cedar, beside the sea, in the midst of a garden of pine-apple, grand bread fruit trees, never failing to win admiration, and sappodilloes bowing to the ground with their russet balls of ambrosial nectar. To your rest and reward good, gentle, willing, and sure-footed Dick! We dream; we shall ever dream of glorious realities past.

JOHN MACKIE.



CHANCELLOR FLEMING.

NOTES ON LIFE AND WORK IN THE CAVENDISH LABORATORY, CAMBRIDGE.

IN 1871 the University of Cambridge founded a chair of Experimental Physics and appointed James Clerk Maxwell to be its first occupant. The new professor was required not only to "teach and illustrate the laws of heat, electricity and magnetism," but also "to apply himself to the advancement of the knowledge of such subjects and to promote their study in the University." Shortly before Maxwell's appointment, the Chancellor,—William Cavendish, Duke of Devonshire—offered to build a physical laboratory and present it to his Alma Mater; so Maxwell had as one of his first cares, the direction of the planning and building of the "Cavendish Laboratory." In 1874 the building was finished and formally presented to the University by the generous donor, who at that time announced his intention of equipping it with apparatus suited to the then present state of science. This gift was completed three years later.

In these and the following years Maxwell's work included his verification of "Ohm's Law" to one one-hundred-millionth of one per cent. also most of his study of the physical properties of gases. His famous books, "The Theory of Heat" and the "Treatise of Electricity and Magnetism"—the latter including his electro-magnetic theory of light—were completed here, though most of the work on them had been done before the author accepted the Cavendish Professorship.

Maxwell died in 1879 and was succeeded by Lord Rayleigh, who in the next five years carried out much of his classic "Determinations of Electrical Standards." Rayleigh resigned in 1884, and the electors chose J. J. Thomson—the present occupant of the chair. Professor Thomson began his great study of the phenomena accompanying the discharge of electricity through gases, the recent results of which have had such a widespread effect in the world of physical thought.

Such, as far as I can learn, is a bare outline of the course of the 'Cavendish' until the early nineties. Then the question of the relation of the University to advanced study and research forced itself upon the Senate with the result that in 1896 action was taken that marks an epoch in the development of research, not only at the Cavendish, but in all departments of the University. By virtue of these new regulations any one—being a graduate of another University, or having published papers or written books, or in any way having given evidence of ability for advanced study or research—may be admitted to the University as an "advanced student," provided only that the work he proposes to do can be conveniently carried on there. These

students by "keeping" six terms (two academic years) "in residence" and by submitting a thesis that in the opinion of the Degree Committee "is of distinction as an original contribution to learning or as a record of original research," may 'proceed' to the degree of B.A. The degree obtained in this way carries exactly the same university standing and all privileges accompanying the degree as obtained through the older courses.*

These liberal regulations seem to have effected a complete change in the nature of the Cavendish. Soon after the adoption of these rules, a couple of research students—men who came to do research and to study research methods—entered the laboratory. From term to term the numbers of such students increased and the institution found itself changing from a laboratory of the ordinary type to a research school—a centre of organized attack on the scientific problems of the times. To-day the Cavendish—with its twenty researchers, led by their beloved professor—ranks not only among the first of such schools but is one, the importance of which is growing from year to year.

The above mentioned advance at the Cavendish is not solely due to the regulations concerning advanced students except in so far as these permit students to come into contact with a man who is perhaps the ablest director of research in physics to be found to-day.

Research schools—more than any other department of university life—must depend for their success on the enthusiasm and ability of individual leaders. This may be seen in Cambridge itself, for while there are many other research departments to which the new regulations apply, none of them, at present, are at all comparable with the Cavendish in number of researchers nor in the importance of the work done. So centres of research will probably pass from place to place, as leaders come and go. Certainly Cambridge leads in Physics to-day, by virtue of the well deserved reputation of Professor J. J. Thomson and of the class of work done under his direction.

An intending student arriving in Cambridge and enquiring for the Cavendish Laboratory is directed to a three-storied stone building in Free School Lane. He finds the whole lower story devoted to research—as the stone floors there were laid under Maxwell's direction especially to secure that steady support indispensable in delicate measurement. On this floor is situated the battery and dynamo room and the large workshop where most of the apparatus used in the building is constructed under the care of a well-known instrument maker, Mr. W. G. Pye. On the second floor will be found the Pro-

*Thus Cambridge admits, to her degrees, those who have shown ability for original thought and work. Such may receive full University standing without ever having passed or even written on an "examination." This is certainly a step in the right direction.

fessor's office, the large lecture theatre, Preparation and Apparatus rooms—in which latter are many historical instruments of Maxwell and other experimenters. There will be found here also the large laboratory where the Arts undergraduates do their elementary practical work. The third story contains a small library and one room where the advanced Arts men work, but the remainder of the floor—four large rooms—is entirely for research. At present, men who cannot find room in the older part of the laboratory are being forced to set up their work in a sort of basement under the single story wing that has been recently built to accomodate the medical practical physics classes.

Naturally, the first step taken by the new student is to secure an interview with the Professor. Here his previous experience in experimental work is talked over and the course of investigation that he intends to enter upon is discussed. The proposed work may meet with approval or the Professor may suggest some other question as being of greater interest or importance. The next few weeks are spent pretty completely in the various libraries where the student posts himself fully on the work already done along the line of his special subject. In frequent informal consultations with the Professor and the research students, a plan of attack is outlined. A place is found in the laboratory where the student may work, and then begins the regular research life. In collecting the various required pieces of apparatus and in constructing or superintending the construction of any special pieces that may be necessary, the new student learns the resources of the laboratory and becomes acquainted with the staff and any of the researchers that he has not yet met. He sees his fellow students daily at their work and finds out just what each is doing or is trying to do. As he works away at his own problem he follows the progress of each of the others, learns their difficulties and watches their methods of overcoming them. He asks their advice when his own work is unsatisfactory, and the time soon comes when advice is asked of him. It is then he feels that his experience and inventiveness have become factors in the general life of the laboratory.

Each day the Professor visits the students to enquire what progress has been made, to talk over difficulties and to suggest methods of overcoming them.

At quarter to five o'clock—except on the regular Saturday half holiday—tea is served in the Professor's private room. There the men meet and while enjoying a cup of tea and a biscuit, chat with the Professor or with one another. The talk runs on various subjects, perhaps it is some difficulties that a student is meeting, or it may be some trouble that the Professor has found in his work; an old physi-

cal theory may be under discussion, or some recent article in the "Philosophical Magazine," or the "Annalen der Physik" may receive attention. At other times the merits of the Australian Cricket team or the chances of Cambridge against Oxford in a coming contest will occupy the chief place in the conversation. It is a half hour—or sometimes longer if an interesting subject is forward—in which Professor and students meet without restraint, when all are more or less at leisure to take their thoughts from their own work. I do not wish to be taken to mean that this is the only time when a student has free intercourse with the Professor, for nothing could be freer than the approachableness of "J. J."—as his students call him among themselves.

At six o'clock the laboratory closes and it is only by special permission that one may continue work.

In the evenings the research men generally meet in one another's sitting rooms, sometimes eight or ten together, sometimes only one or two, and over coffee and cigarettes discuss "shop" and general topics until nearly midnight. The enthusiasm of the Professor for his work is felt strongly among his men, so much so indeed that it was the writer's experience that one profited as much from an evening's discussion with the more experienced students as from attending a set lecture. These features of research life in the Cavendish are so attractive that the tutors of the college frequently complain of the "exclusiveness of the advanced students."

* * *

The nature of the work being carried on at the Cavendish Laboratory may be understood from the following notes on the corpuscular theory of electricity which has been almost entirely developed there. These notes make no pretence at completeness.

About sixteen years ago Professor J. J. Thomson suggested that the electric current in metals, gases, etc., might be a flow of small charged particles within the body of the conductor. The objection was raised that on this hypothesis an electric current flowing across a junction of two metals should carry particles of one into the body of the other. For instance, if a current flowed from a copper wire to an iron wire, particles of copper should be carried into the iron and thus make an alloy of the two metals—at least, near the points of junction. Experiments were made by sending large currents across such junctions for some weeks, but as all results tended to negative the idea that the electric current increased the natural interdiffusion of the metals, the theory was discredited, at least in that form.

Before taking up the present ideas on the above subject it will be well to recall the theory of what takes place when a solid salt is dis-

solved in water. When, for example, common table salt—sodium chloride—dissolves, some at least of the molecules exist no longer as a compound of sodium and chlorine but are found broken up into *atoms of sodium bearing charges of positive electricity, and atoms of chlorine bearing charges of negative electricity*. These charged atoms existing as such in the solution are known as *ions*. In the process of electrolysis the current is carried by these. The chlorine ions being negatively charged, move under the influence of the electrostatic field set up between the electrodes and so approach the positive plate of the cell. There they give up their electric charges to the metal and then either unite to form chlorine molecules or immediately enter into chemical combination with some of the surrounding substances. The sodium acts similarly at the opposite pole of the cell. From some of Faraday's results it follows that the charge carried by an ion is either a fixed quantity of electricity or a simple multiple of that quantity. That is, the quantity of electricity carried by ions of monovalent elements such as potassium, sodium, chlorine, etc., is always the same as that carried by a hydrogen ion, while the quantity carried by divalent elements such as copper, lead, etc., is always just twice that amount. Thus the electricity carried by a hydrogen ion seems to be a natural unit of quantity, for not only is it the same for all hydrogen ions in solution but it is the smallest quantity of electricity known to present day science.

When Roentgen discovered the "X-rays" he also found that the air through which the rays were passing had an abnormal electrical conductivity but that this rapidly diminished when the rays were shut off, reaching its normal value in the course of a few seconds. Professor J. J. Thomson and his students immediately took up the study of this latter effect and it was found that the impact of the rays on the air (or any other gas) ionized it: that is, broke it up into particles carrying positive and negative electric charges. In the case of the ionization of a gas, there is no *chemical* decomposition of its molecules as occurs in solutions, but the change—to be explained presently—is of a nature previously unknown. The charges carried by these gaseous ions are the *same as those carried by hydrogen ions* in solutions—which, as we have said, are a sort of "electrical atom" or minimal quantity of electricity.

From these facts it will be seen that the conductivity imparted to gases by the passage of X-rays is due, as in the case of solutions, to the actual transport of electricity by the movement of charged particles and that the rapid decay of the conductivity, when the rays are shut off, comes from the *recombination* of the ions, forming neutral molecules of gas. This action being due to the mutual electrostatic

attractions of the oppositely charged ions. Of course this recombination goes on even when the rays are passing; and a steady state is attained when the number of ions disappearing by recombination in any given time is equal to the number produced by the rays in that time.

The electrical discharge in rarified gases, as in "vacuum tubes," is carried by these gaseous ions—and an examination of their electrostatic and magnetic properties shows that the *negative ion is the same in all cases*—at least at the beginning of its course.¹ That is, its properties are independent of the nature or constitution of the gas in the tube, of the metal from which the electrodes are made, and of the means taken to ionize the gas—for the X-rays are not the only means at our disposal.

These bodies have received the name "corpuscles." The mass of a corpuscle is of the order 2×10^{-27} grams or *about one thousandth of the mass of a hydrogen atom*—the smallest previously known mass in nature. The positive ion, on the other hand, is of atomic or molecular dimensions and varies from gas to gas.

It is believed that the passage of the intense electromagnetic pulse—constituting the X-rays—in some cases produces a field strong enough to detach a corpuscle from the previously neutral molecule of gas and that the remaining part, having of course an opposite and equal charge is the positive ion. These then are free to move under the influence of any electrostatic field that may be present, or if left in merely their own field will recombine by virtue of their mutual electrostatic attraction.

In the case of the Kathode Rays, the nature of the gas or of the metal of the cathode has—as has been stated—no influence on the properties of the corpuscles. These issue from the metal and as they move about a thousand times as fast as the big positive ions we may consider, for a first approximation that the current is carried entirely by them. This brings us back to the original hypothesis of Prof. J. J. Thomson, the objections to which are now seen to be removed, for if the *corpuscles* in the before-mentioned copper wire are the *same* as those in the iron wire, no test will reveal their passage from one to the other.

These corpuscles in a metal seem to exert a "corpuscular pressure" and in many ways to conform to the laws followed by the molecules of a gas. Consider the case of a hot platinum wire or a carbon filament. The surrounding gas is rendered conducting by the cor-

(1) In dusty air, the negative ion may attract to itself particles of dust, thus increasing the total moving mass.

puscles from the wire⁽¹⁾ passing out into the surrounding space in a manner similar to that in which the molecules of an evaporating liquid escape into the gas above it. We know that carbon, even at temperatures attained in a laboratory, emits corpuscles carrying currents of the order of one ampere per square centimeter of surface. Now if the sun's light be due—as astronomers believe—to glowing carbon, our luminary must act as a gigantic kathode emitting streams of corpuscles into all space. These particles on reaching the earth's magnetic field will travel along the lines of magnetic force north and south, and as these "dip" the corpuscles enter layers of air sufficiently condensed to luminesce, and the aurora results. Arrhenius has worked out this theory in detail and shows that it explains the observed lunar and sunspot periods of the aurora. This stream of negatively charged particles will charge the earth (and moon) negatively until a state is reached in which the number of corpuscles radiated from the earth into space equals the number gained from the sun in the same time. Thus the known negative charges of the earth and moon are easily explained. The luminosity of the nebulae, too, has been attributed to these 'rays' passing through masses of gas,—not necessarily at high temperatures. Other astronomical phenomena, such as the behaviour of comets near the sun, zodiacal light, gegenschein, the 'opacity of space,' diffusion of light from the sky, etc., find explanations as results of this idea.

The diamagnetic properties of most substances follow directly from the action of the corpuscles; also other obscure phenomena, as the change of electrical resistance experienced by conductors when placed in a magnetic field, the "Hall effect," and contact difference of potential. Thermo-electric effects find comparatively simple solutions from the heat properties of the corpuscles and there is good reason to suspect that these may be the chief agents in the carrying of heat itself as well as of electricity.

I would like to add a numerical instance of corroboration of gas theory from these corpuscular measurements. Kelvin, Maxwell. Clausius and others have calculated the number of molecules in a cubic centimeter of gas at normal temperature and pressure, but all their investigations are based on assumptions as to the shape of the molecules and the laws of force existing between them. The follow-

(1) These corpuscles, it should be noted are not *produced* by the electric current but exist in the metal moving about like the molecules of a gas. Non-electrified pieces of metal contain equal numbers of positive and negative ions—an equilibrium being maintained between those recombining and those dissociated from neutral molecules, possibly by the molecular movements of temperature. The application of an electromotive force to the ends of the metal would impose a drift of the corpuscles along the electrostatic lines of force, just as in the case of a wind in air which is a drift of the molecules of air in a given direction, but it is by no means to be imagined that every molecule of air is moving only in the direction of the wind.

ing simple calculation is based entirely on electrical measurements—depending on no assumed laws of attraction nor on any geometric form or elastic properties that the molecules may be supposed to possess.

In electrolysis the passage of one electrostatic unit of electrical quantity always liberates 4.1×10^{-11} cubic centimeters of hydrogen. If a cubic centimeter of this gas contain N molecules it will consist of $2N$ atoms, or $2N$ is the number of ions that have given up their charges to the electrode in the liberation of one cubic centimeter of gas. Now let e be the charge carried by a hydrogen ion, then $4.1 \times 10^{-11} \times 2Ne$ will be the total charge carried by the ions in the passage of a unit of electricity, that is

$$4.1 \times 10^{-11} \times 2Ne = 1 \text{ (electrostatic unit of electrical quantity.)}$$

But from vacuum tube measurements we know that e , the charge on a corpuscle, is 6×10^{-10} electrostatic units, whence

$$N = 2 \times 10^{19},$$

a number that tends to justify the assumptions of the mathematical investigators as their results for the same quantity, N , range from 10^{19} to 10^{21} .

This theory does not supersede the work of Maxwell, as has been supposed by some. It is rather an extension of it. Maxwell confined himself to what goes on outside the conductor while J. J. Thomson and his school of physicists are investigating the phenomena occurring within it.

There are, of course, cases where phenomena occur that seem to be the opposite of what the corpuscular theory would lead us to expect. These are not so easily stated as those that support the idea. Further investigation will probably reveal other properties of the corpuscle or will indicate the directions in which theory must be modified to bring it into correspondence with fact. In any case, the great range of application of the corpuscular idea tends to show that we have in it a real advance in the theory of the constitution of matter.

WILL C. BAKER.

SAWDUST AND FISH LIFE.

THE question "Is sawdust injurious to fish-life?" has been before the Canadian public for over forty years. On the one hand have been ranged the pot-hunters, some anglers and fishermen; on the other hand, the lumber kings and the army of shop-keepers and farmers whose goods and produce were consumed in connection with the lumber industry. The professional politicians, badgered by both parties, were "between the devil and the deep sea." The general public were indifferent; the scientists too busy with what they considered more important questions.

Previously to the passing of the laws of 1860, 1865 and 1868, making it illegal to throw slabs, edgings and mill rubbish into streams and rivers containing protected fish, there had been no lack of discussion on the question, both in Parliament and in fishing hamlets. Nor was there any lack of literature in the form of petitions, counter-petitions, and wobbling official reports. Consequently when the Fisheries Act came to be amended in 1868, and made applicable to the whole Dominion, a very important proviso was inserted in it. The prohibitory clause in the act of 1865 was practically as follows:

"Lime, chemical substances or drugs, or poisonous matter (liquid or solid), dead or decaying fish, or any other deleterious substance shall not be drawn into, or allowed to pass into, be left, or remain in any water, if frequented by any of the kinds of fish mentioned in this act; and sawdust or mill rubbish shall not be drifted or thrown into any stream frequented by fish, under a penalty not exceeding a hundred dollars."

In 1868 there was tacked on to this clause the following:—"provided always that the Minister shall have power to exempt from the operation of this sub-section, wholly or from any portion of the same, any stream or streams in which he considers that its enforcement is not requisite for the public interests."

Needless to say, streams in the Maritime Provinces, Quebec and Ontario, were exempted every year almost up to the first of the twentieth century. But to this we shall revert later. Much more to the purpose of this paper is it to note that the discussions and official reports of forty years ago and much later are nearly all alike lacking in everything but confident assertion and equally confident contradiction.

The one party pointed to the diminishing numbers of trout and salmon in all rivers and streams into which mill refuse was thrown, as convincing proof that sawdust was slowly but surely poisoning all fish-life at its source. The other party triumphantly pointed to

streams that had been polluted for a century with refuse from saw-mills, tanneries, brush and broom factories, and were nevertheless still among the best trout streams of New England. The one party pointed to miles of floating sawdust in bays, estuaries and rivers, to acres of rubbish beds along quiet shallows and on pebbly bottoms. and then asked pathetically how fish could possibly live in such filthy surroundings; the other party pointed to increased catches of fish in rivers covered with floating sawdust, and triumphantly asked what harm mill refuse was doing, any more than decaying trees and dead leaves in primitive forest streams. The one party claimed that the sawdust stuck in the gills of the fish; that they eat it, and were killed by it; the other party asked where the dying fish were to be found: they were never seen dead in any numbers, as they always are when killed by poisons from chemical or dye works. When the one party asserted that the feeding grounds of the fish were covered for miles with decaying mill refuse, the other party asked if an army of divers had been employed to make a survey of the bottom of Lake Michigan. and asked if the divers had found the depths of Lake Huron covered with bark eroded from the saw-lows towed across to Saginaw Bay. from the Spanish and French rivers.

It is simply amazing how intelligent people accept a ready-made explanation for any unusual fact. Witness the popular belief that horse hairs turn into eels; that young toads come down in a thunder shower, and a hundred other absurd beliefs. No wonder the Royal Society at its foundation adopted the rule that no member was to report any occurrence except one which he had himself verified. If our fishermen and over zealous fishery officers had been compelled to produce proof of their statements regarding the baleful effects of sawdust, we should be much nearer correct conclusions to-day than we are. As matters stand now we are almost precisely where we were twelve years ago; but with this difference. *Then*, the superintendent of our fish hatcheries was cocksure of the poisonous effects of sawdust and thought that "it would be needless in the present enlightened state of the world to require any special pleas or arguments to convince even the most skeptical person of its disastrous workings upon all aquatic life of an animal or vegetable character, found in the tidal lacustrine or fluvial waters of any country." *Now*, our fish commissioner advances arguments to prove, that sawdust does not, at any rate, injure adult fish, and laments that there is a painful lack of scientific and demonstrated knowledge of its effects upon fish life.

Whereas, before 1888, there were numerous references to it in scientific reports, and in that year and the following one, a lengthy correspondence in *Forest and Stream*, in which all phases of the

question were discussed ; since 1889, the references to it are few and far between, and when its poisonous effects are asserted, the responsibility for the statement is placed upon the fishermen or fish dealers. Even the International fish commissioners of 1893, made no dogmatic statements of their own, but simply submitted the statements of witnesses whom they had examined.



Sawmill on the Bonnechere river, a branch of the Ottawa. Sawdust and edgings pass into the river from the end of the mill.

The fact that the scientific reports of the United States Fish Commissioner for the past twelve or fifteen years make but slight references to the subject may be interpreted in two ways: it may mean either that the writers are satisfied with the proofs submitted some forty years ago, or it may mean that the testimony against sawdust is so scanty and untrustworthy that these fishery experts will not commit themselves to any definite statement. Witness the report of Richard Rathbun for 1899, in regard to Washington Territory and British Columbia: "Attention has been especially called to the Skagit river, on whose banks there are numerous shingle mills from which a very large amount of refuse is allowed to enter the water. *According to the statements from the fishermen* in that region this practice has caused a great deal of damage to the spawning grounds of the salmon and has affected the fishery in other ways."

In 1899, Professor Prince, the Dominion Fish Commissioner, wrote: "So far as our present knowledge goes, sawdust pollution, if

it does not affect the upper waters, the shallow spawning and hatching grounds, appears to do little harm to the adult fish in their passage up from the sea."

Contrast with this the opinion of Mr. Bastedo, the Deputy Commissioner of Fisheries of Ontario: "There can be nothing more destructive of fish life than the depositing of sawdust in the rivers and lakes. It is said to absolutely kill all vegetation, and it is well known that in waters where there is no vegetation, fish life is noticeably absent." From his report of 1899.

One regrets exceedingly to read such a strong and confident expression of opinion from an official occupying a high scientific position. All the more is it to be regretted when one learns that two or three mill owners in Ontario have recently been fined for violation of the Dominion act. If Professor Prince is right the Ontario executive should refrain from such prosecutions for the future, and the Dominion Government should promptly amend the law.

But this is recent history. To go back again to thirty or forty years ago, we find the list of charges brought against sawdust to be a very long one.

1. "It stains and pollutes the water."
2. "It is offensive to the fish."
3. "It clogs the gills and kills the fish."
4. "It revolts the cleanly habits of the fish."
5. "It causes a fungus to grow upon the eggs."
6. "It buries the fry or suffocates them."
7. "It covers the feeding grounds."
8. "It interferes with the operations of the fishermen, by rotting and breaking their nets, or by clinging to them so that the fish become aware of the presence of the nets and avoid them."
9. "It limits or destroys the spawning grounds."

Against saw-logs:

1. "Saw-logs give off poisonous extracts which permeate the adjacent water."
2. The bark, especially hemlock, gives off a "slimy fibrous debris," which must be regarded as "highly injurious."
3. The grinding of the logs against each other in the booms, or when being towed across lakes, like Lake Huron, "sets free the fine inner bark which settles to the bottom and covers the spawning grounds or feeding grounds."
4. "This bark in course of time rots and forms into a kind of slime, and fish will not stay on that ground."

Some of these objections are so vague that one is at a loss to understand what is meant; others are refreshingly precise consider-

ing that the alleged damage takes place at the bottom of Lake Huron. As an example of a vague effect, take the very first regarding sawdust: "It stains and pollutes the water." Now the cause of the various shades of color in our natural waters has never been clearly determined, and until this is done, it is idle to make assertions about the special part which sawdust plays in the discoloration of our Canadian streams.

Nor is the assertion about pollution any nearer the mark. By a polluted water we usually mean one that is unfit for human use. What is meant by the term when it is applied to fish, it would be difficult to say. One would naturally suppose that water which was fit for man to use would be good enough for a fish. But apparently not. The waters of the Ottawa river, especially from Ottawa city down to Montreal were a few years ago, as everybody knows, polluted with sawdust. Large quantities were poured into the river at Ottawa. All the way down, each tributary contributed its quota of mill refuse to the main stream. And yet in 1890, when the Montreal City Council called the attention of the Dominion to the matter, and Mr. A. McGill, B.A., assistant analyst in the Inland Revenue Department was directed to make a series of analyses of this water, the first report read: "No facts have yet been discovered which would lead to the conclusion that the sawdust deposits materially affect the quality of the water of the Ottawa river." After a second investigation at a different season of the year, Mr. McGill reports: "As to the fitness of the Ottawa water for domestic uses, I may say that it contains nothing that must necessarily render it unwholesome."

This is the kind of water which, according to the opponents of sawdust, "revolts the cleanly habits of the fish" and "drives them away." Charles Kingsley, in the *Water Babies* has an amusing reference to the ascent of a pair of salmon.

"I had nothing to play with but caddises and dragon flies and trout," said Tom.

"Ugh!" cried the lady (salmon), "what low company!"

"My dear, if he has been in low company, he has certainly not learnt their low manners," said the (gentleman) salmon.

"No, indeed, poor little dear! but how sad for him to live among such people as caddises, who have actually six legs! and dragon flies, too! Why, they are not even good to eat; for I tried them once and they are all hard and empty; and as for the trout, everyone knows what they are." Whereon she curled up her lip, and looked dreadfully scornful, while her husband curled up his, too, till he looked as proud as Alcibiades.

"Why do you dislike the trout so?" asked Tom.

"My dear, we do not even mention them if we can help it, for I am sorry to say they are relations of ours who do us no credit. A great many years ago they were just like us, but they were so lazy, and cowardly, and greedy, that instead of going down to the sea every year, to see the world and grow strong and fat, they chose to stay and poke about in the little streams, and eat worms and grubs; and they are very properly punished for it, for they have grown ugly and brown and spotted and small; and are actually so degraded in their little tastes that they will eat our children."

"And then they pretend to scrape acquaintance with us again," said the lady. "Why I have actually known one of them propose to a lady salmon, the impudent little creature!"

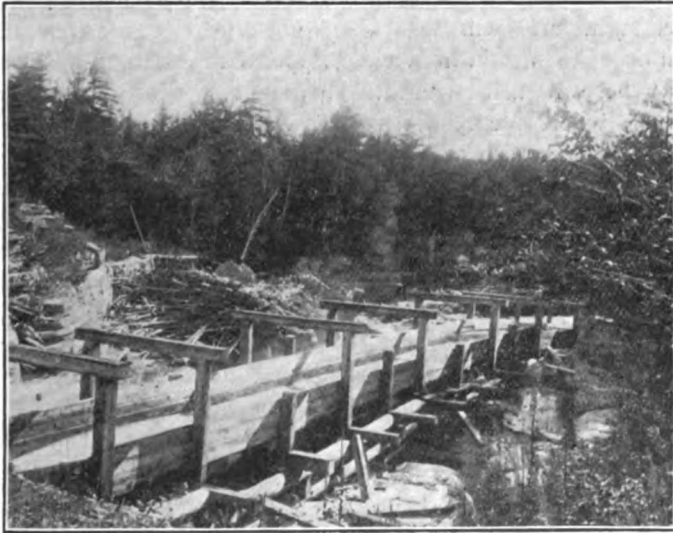
No doubt if the ascent had taken place in a Canadian river, the lady trout, lady salmon, and lady alewives would have been turning up their noses at the tainted condition of our sawdust polluted streams.

As regards the other charges, there is not one of them, except the last, the correctness of which has not been challenged by a number of anglers, fishery overseers, and mill owners. When proof is demanded there is precious little forthcoming. Pages of extracts could be given expressing the most opposite views on nearly every count, but a few must suffice.

The following is an extract from the late Mr. S. Wilmot's report on Fish Breeding Operations in the Dominion of Canada for 1889, and presents one side of the question.

"Wherever mill dams have been built across streams, and where sawdust, mill rubbish and other deleterious substances have been cast into the water from saw-mills and other manufactories, fish-life and vegetation of all kinds have been greatly lessened, and in many instances wholly destroyed. This is particularly noticeable among the higher order of fishes, especially the salmon family, which are largely of a migratory nature, many of them ascending rivers and other streams for breeding purposes. These waters are usually of the purest, coldest and most limpid description, and therefore best adapted for the propagation of the salmon species. Then fish, at this time of the first settlement in Canada, were found frequenting almost every river and stream emptying into the sea, and the great lakes also. So plentiful were they in many of our waters, before the lumbering industry took such a strong hold in the erection of dams and saw-mills, with the consequent injurious effects from them upon fish-life, that fish of all kinds were in great abundance. They were freely used by the inhabitants generally for domestic purposes, and also produced a large amount of traffic and commercial wealth for the

country. But as the saw-mills and mill dams increased in numbers, with greater capacity for their work, the mill dams formed impassable barriers to the ascent of the salmon and other fishes to their natural spawning grounds above—and then the hurtful and pernicious effects arising from the sawdust and mill rubbish being constantly cast into the streams poisoned the spawning beds below, and stayed the growth of all vegetation, thus driving away insect life, which is the principal sustenance for fish in their younger stages of existence. As this improvident work of the mills increased in magnitude, so did the yield of all kinds of fish decrease in the waters, until it has been found in some cases, that after stripping the neighborhoods of all lumbering material and destroying all fish life, these mills have gone into ruin and decay, leaving sorrowful mementos only to their destructive workings in the waters of the country for the inhabitants who follow after.”



Slabs and edgings just below the Sawmill. Timber slide in the foreground.

Editor Forest and Stream :

Your correspondent “Sportsman,” who writes on the evils of sawdust, seems to me like most others who hold the same views, to take for granted the thing to be proven. The onus probandi being with him who affirms, I dispute the statement that “sawdust kills fish” by fastening itself in their gills. “Sportsman” says: “After sawing pine in a mill, I have gone along the stream and picked up dead trout, and upon examination found their gills to be full of pine

sawdust which, without a doubt, kills them. I can name several persons who have witnessed the same thing." But finding a dead trout or two with sawdust in their gills is no proof that the sawdust did the killing. Those who are familiar with rivers and river fish know that when a fish dies, from whatever cause, its gills will open, and if sawdust is running plentiful in the water some of it is likely to lodge in the gill openings of a dead fish. I have seen one or two such cases, but evidence was there also plain and clear to an experienced eye, that the fish had died from other causes. Moreover, fish don't allow anything to get into its gills which is likely to kill it, except by accident. It is provided with the necessary instincts and means for protecting them from all or any such foreign substances as sawdust, if not, we should long since have lost about all the anadromous fishes in our streams, and at certain seasons, and in certain places, large numbers of dead, struggling and dying fish would be seen in, upon and about the surface and shores of rivers. But such is not the case; no such sights are seen.

In order to sustain his views "Sportsman" should produce some stream where the fish have either been wholly destroyed, or largely decreased, where plenty of sawdust exists, while dams have been opened so that the fish have had ready access to their spawning beds above. Such a case, I think, cannot be found on this continent, unless indiscriminate fishing has been allowed at all seasons of the year. I herewith produce tables showing the catch of fish on two, out of a dozen or more, similar cases in Canada. Sawdust has been running into these two small streams for six to nine months of the year, for over half a century. Impassable mill dams at the head of salt water had completely depopulated the Clyde, and nearly did so on the Medway, which fared better because the dams were further up the river. The dams on the former were opened in 1879, and on the latter a few years earlier, but in both cases the sawdust continued to run freely, as it does still:

Clyde River, Nova Scotia.

Salmon, lbs.		Alewives, hbls.
1879 Dams opened..	.....
1880.....	.....
1881.....	.....
1882.....	.....	5
1883.....	.....	10
1884.....	.....	20
1885.....	300.....	35
1886.....	2,480.....	120
1887.....	3,570.....	90
1888.....	3,975.....	130

Medway River, Nova Scotia.

	Salmon, lbs.	Trout lbs.	Alewives bbls.	Smelts. lbs.
1878.....	22,871.....	.....	70.....	
1879.....	11,896.....	.....	262.....	2,000
1880.....	5,313.....	.....	725.....	4,000
1881.....	7,615.....	.....	4,864.....	3,750
1882.....	8,388.....	.....	3,747.....	7,400
1883.....	21,169.....	915.....	3,262.....	8,550
1884.....	20,315.....	1,650.....	3,082.....	15,200
1885.....	30,230.....	2,050.....	3,005.....	16,000
1886.....	22,005.....	2,375.....	3,505.....	18,250
1887.....	22,984.....	2,615.....	3,837.....	21,500
1888.....	18,450.....	2,775.....	2,966.....	22,700

Sawdust in large quantities has not killed the fish here. I have never yet been able to obtain any such facts to sustain the opposite view. This is an age of investigation, and few things are taken for granted in the absence of facts or evidence to sustain them; and we have a right to ask of those who claim that sawdust is ruinous to fish to produce their proof.

"Sportsman" is also in error when he says that sawdust covers up the spawning beds. I have never been able to discover such, and I have examined many rivers for that purpose. The fact is the current is too strong where the salmon or trout would spawn to allow it to remain, hence such spawning beds are as clean to-day as ever they were, no matter how much sawdust has been coming down the river.

But even if it should lodge in such places, he must prove by actual facts how and why it would injure them. Sawdust does not rot under water, nor does wood of any sort, where it mingles with sand or mud in coves along the shores or about the heads of estuaries where the water settles away from it by the ebbing of the tide, or in fresh water.

When it is left dry in summer, it will of course rot and soon disappear, and by far the greater portion of what falls into the streams from mills driven by water power disappears in that way. So far as I have been able to ascertain, the fish-killing effects of sawdust in any way or place has yet to be proven, and until such indubitable proof is produced, I, for one, shall continue to disbelieve it. I have had considerable experience in this matter, but am always willing to bow to well-authenticated facts. The matter is an important one and calls for intelligent settlement, and in my humble opinion, it is not difficult to settle right.

PISCATOR.

Truth to tell, the weight of the arguments went with the mill owners. To aid their opponents, only one fact appeared to stand out prominently, and it was this: trout and salmon were admittedly decreasing in many streams into which mill refuse was thrown. The opponents of sawdust claimed that increase of sawdust and decrease of fish stood to each other in the direct relation of cause and effect. The mill men admitted the decrease but gave an entirely different explanation. It was due, they said, to lack of fish ways, to overfishing during the spawning period, or to a natural fluctuation in the numbers of fish, the cause of which was unknown.

History records that the repeal of the corn laws in England was promoted more by the failure of the potato crop than by the efforts of the Cobdenites. In the same way anti-sawdust legislation in this country was largely due to failure of certain branches of the fishing industry. First the catch of shad fell off in the Bay of Fundy; a few years later the Digby herring fishery failed, and in both cases sawdust was pointed to as the prime cause of the failure. As a consequence numerous petitions from fishermen, ignorant enough to assert that shad eat sawdust, and from sympathizing friends ignorant enough to believe it, were presented to the legislatures of the Maritime Provinces and the Canadas, and notwithstanding the opposition of the lumbermen, sportsmen and citizens, passing sawdust into rivers and streams containing anadromous fish was prohibited by law.

When, after the lapse of a few years, the shad and herring fisheries revived, notwithstanding the disposition of increasing quantities of sawdust in the rivers of the country, the hesitation to enforce the prohibitive legislation increased, and the law remained inoperative up to 1899. In 1897 a decision of the Privy Council placed the fresh water fisheries under the control of the different provinces, and now that Ontario has her fishery department in full working order, she proposes to enforce the law against mill owners, notwithstanding the uncertainty of the grounds upon which the prohibitive legislation was based. Naturally enough many of the mill owners object to incur the expense of carting away or burning the sawdust—an expense that has never been proved to be necessary in the interests of the fisheries.

Such was the state of our knowledge in 1900, when at the suggestion of Professor Prince, I undertook some experiments at St. Andrews, New Brunswick, for the purpose of ascertaining whether or not sawdust was injurious to adult fish. The result of my experiments were published in the report of the Minister of Marine and Fisheries, and went to show that brook trout were not injured by living for two weeks in a tank filled with sawdust and water, so long as

a copious flow of water was passed into, and out of the tank. These results were abundantly corroborated this summer (1902) in a series of experiments carried on for several weeks in the Biological laboratory of Queen's University. Perch, rock bass, and black bass fry were all used. In fact the tests this season were, if anything, more exacting than they were in 1900. The volume of pine and hemlock sawdust used was, this year, 20 per cent. of the whole volume of the tank, and both adult fish and black bass fry (these latter about six weeks old and only an inch long) were kept for four or five days in the mixture without any injury whatever.

When, however, fresh sawdust was allowed to remain in still water, or in slowly running water, entirely different results were obtained. The most disastrous results followed. Not merely did adult



Slabs, edgings and sawdust half a mile below the mill.

fish die in it, but fish eggs, fry, worms, small anthropods, animalcules, and aquatic plants. Nor was the cause of death in these cases due, as was suggested by the *Montreal Witness*, to suffocation, that is, to lack of oxygen in the water; because when air was bubbled rapidly through the solution, the results were the same, the only difference being that death was slightly delayed. No one could paint too vividly the deadly effects of pine and cedar sawdust when soaked in standing water. Adult fish died in two or three minutes, fish eggs in a few hours, fry and minnows in from ten to fifteen minutes, aquatic insects and worms, eight to ten hours, aquatic plants, a few days.

Every living thing died, and if one were to judge of its effects by laboratory experiments alone, then the prohibitory legislation could have no better defence.

But there is always a *but*. Laboratory experiments are inconclusive unless verified by an appeal to nature, and some river observations that I made last summer seem to contradict the laboratory results. Before a final judgment can be pronounced upon the poisonous effects of sawdust, it must be studied near the mills and along the sawdust beds of the rivers. A two weeks' study of the Bonnehochere river, a tributary of the Ottawa, much polluted with mill rubbish, lead me to modify very considerably the conclusions which I had based upon my laboratory experiments. I visited the mill represented in the illustrations of this article, fully expecting that not one fish could survive in such surroundings. But fish could be caught any day along the side of the submerged driftwood, and stranger still, the fish so caught lived for three hours in sawdust water drawn from the very centre of a sawdust bed. It is only fair to add that the mill had been closed seven weeks before the date of my visit and no sawdust was then passing into the river.

The conditions along a river differ from what they are in a laboratory. In a laboratory the relative quantities of sawdust and water can be infinitely varied, and strong or weak solutions can be obtained and used at pleasure. Along a river the strength of the wood extracts is varying nearly all the time, according to the quantity of mill rubbish thrown into the stream, and the volume of water composing it. Moreover, the solution gradually loses its poisonous character from day to day and week to week, depending upon whether the stream is sluggish or rapid, shady or sunlit.

Of course the laboratory experiments were made to approximate as closely as possible to the varying conditions in a river, and were intended to be preliminary to a biological survey of some of our sawdust polluted waters. Judgment is reserved pending further investigations, but if required to express an opinion at the present time, I should agree with Mr. W. C. Edwards, M.P.: "We think a wonderful lot of nonsense has been preached with regard to this matter. Conditions may possibly be different in very small streams, but so far as the Ottawa is concerned, if we had double the saw-mills on it that it has, and if all the sawdust went into the stream neither the fishing interests nor navigation would be injured."

Whether a proper biological survey is made of our rivers will depend upon the Dominion, or Provincial Governments. The Dominion has a marine laboratory on the Gulf of St. Lawrence, and a lake laboratory on the Georgian Bay. Ontario has no scientists at work

in her fishery department. She needs none so long as the Minister of Marine and Fisheries continues to take the chestnuts out of the fire for the Ontario commissioner. The provincial government enforces the prohibitory law and gets the credit of doing what the Dominion government failed to do from 1868 to 1898. Meanwhile it is by no means settled that sawdust is injurious to river life, and many lumbermen are being put to great expense in disposing of it, when others get off scot free. How long will this continue?

A. P. KNIGHT.

BOOK REVIEWS.

Prophetic Ideas and Ideals—a series of short studies in the prophetic Literature of the Hebrew people, by W. G. Jordan, B.A., D.D., Professor of Hebrew and Old Testament Literature in Queen's University, Kingston, Canada. (Fleming H. Revell Company.)

THIS book is a much needed and very welcome contribution to the literature on the Hebrew prophets. Good books there are on the prophets—many in German, and some in English; but no book has attempted to do just what this book has done. Robertson Smith's great book on *The Prophets of Israel*, deals only with the earlier period of prophecy. Kirkpatrick's careful *Doctrine of the Prophets*, sketches the development of each prophecy and summarizes its salient thoughts. Farrar's *Minor Prophets*, as its title suggests, deals only with the shorter books of prophecy. Cornill's admirable book on *The Prophecy of Israel*, always suggestive, is often necessarily very brief. Professor Jordan's *Prophetic Ideas and Ideals*, besides dealing with all the prophets, except Obadiah, considers their respective messages from the point of view of the modern man who is interested in religion; so that here we have in simple and lucid form, a presentation of the great truths for which the prophets contended, and by which they lived—a presentation which cannot fail to be as fascinating as it must be surprising to those who have been accustomed to think of Hebrew prophecy as a dark and unintelligible riddle.

The plan of the book is unique. Prof. Jordan does not attempt to deal with any prophet exhaustively; he selects certain typical utterances or scenes. And no one, who knows much of the difficulty of the prophets, will be inclined to question either the wisdom of the policy or the propriety of the selection. If we confess the truth, we shall have to admit that large tracts of prophecy will never be very intelligible to the modern man who is not an expert. To many of the solutions we have forever lost the key, and of many of the situations we have not sufficiently definite knowledge. But there are other passages—and these not a few—of eternal importance, and the scholar who selects those for us wisely, and who makes us think the prophet's thought over again, and throb with his emotion, and share his vision of God and man, fulfils the highest function of the scholar, and makes us everlastingly his debtor.

The book before us is the work of a man who has thought long and independently on the questions he is discussing. There is in it much solid and patient learning which appears so unobtrusively that hardly any one would suspect its presence, but one who has himself

carefully covered all the ground. Sometimes the author's translation, e.g., implies an emendation of the text (cp. p. 134, Heb. II, 1) ; a single phrase or subordinate sentence sometimes suggests intimate familiarity with the problems affecting the textual criticism of the passages under discussion (cp. p. 93, Is. VIII, 16) ; often an interpretation is suggested at variance with the conventional one (cp. p. 90, Immanuel). But the author has steadily resisted the temptation to be drawn into the discussion of side-issues ; and, amid conflicting opinions as to date (Is. XI), or interpretation (Is. LIII), he has fastened upon the truth that is essential, eternal, and independent of minor questions of date and authorship. Indeed, this may be said to be the leading characteristic of the book : it disengages the eternal truths of prophecy from the temporal issues with which they were involved, and shows their relevance, duplicability, and power upon the life of to-day.

Professor Jordan has succeeded admirably in the most difficult of all tasks that the interpreter can set himself : he has at once done justice to the ancient setting of the prophets, and he has made them speak in understandable language to the men of to-day. It is one thing to be a scholar, and to deal with the problems of an ancient literature in an academic spirit ; it is another thing to be a homilist, and to preach modern sermons on ancient texts ; but much harder than either of these is it to be at the same time the scholar and the preacher, or rather to let the prophets speak for themselves in language intelligible to the educated men and women who fill the pews of our churches, or rather who too often do not fill those pews, partly because of the superficial and "spurious evangelism" which is occasionally offered to heal the deep hurt of their souls.

Professor Jordan's task is obviously a congenial one. He brings to it not only knowledge of the prophets, but the spirit of a kindred soul. The portrait of the prophet as a failure (Jeremiah) is a particularly powerful piece of work. His power to make the prophet speak in modern language is conspicuous in his treatment of Malachi, and perhaps still more in his treatment of the difficult prophecies of Zechariah, under the suggestive title "The City without a wall." One of the freshest and most original chapters in the book is that on Jonah—"the prophet's protest against smallness."

There is here insight and poetry, as well as much subtle and delicate exegesis. The thought sometimes takes a quaint and unexpected turn, as in the application of the sentence, "No man can see God and live," in the fine chapter on *The Vision of the King* (p. 60). One cannot refrain from mentioning, though only in a passing word, the freshness and nobility of the style ; many of the phrases and sen-

tences are striking and memorable. "The real test of the vision is the daily life." "Subscriptions were of great service, but the men who have saved great causes have also given their souls."

The book is the work of a man who has great faith in preaching (p. 224); but it must be preaching of the right sort. And, apart from its service as an interpretation of the prophets, this book will be of high value to the preacher as a constant reminder of what the religion, which he preaches, really is. It is not a thing of easy formulas or hard categories or dogmatic truths; it is always a deeper thing than the dogmas and institutions in which it expresses itself. And the tragedy of average religious life is that it is so often identified with these. Professor Jordan speaks somewhere of "the rest which Protestantism does not give." In this sense, his book is intensely Protestant. It makes us feel again the impossibility of a man of really prophetic spirit, whether in the ancient or modern world, resting on any external authority, or refusing to accept new facts. It makes us "revise our small standards of success and failure" (p. 173); it helps to make us feel that life is a unity, and that between its most diverse activities there can be ultimately no divorce. We do not know any book which, with the same comprehensiveness and brevity, sets forth the essential ideas of Hebrew prophecy. It will be indispensable to the layman, the theological student, and the minister, who desires to learn, or who is willing to be reminded, how noble and reasonable, how sane and inspiring, was the religion proclaimed by the prophets of Israel.

JOHN E. MCFADYEN.

Knox College, Toronto.

How I read Carlyle's French Revolution.

By D. Heggie, M.D. (Toronto: William Briggs.)

Dr. Heggie is an Alumnus of Queen's College, who has done credit to his Alma Mater by this book. It is an admirable thing that an M.D. in active practice should read such works as Carlyle's French Revolution at all. We hope it may long prove characteristic of our graduates that even such of them as are engaged in engrossing professional work should not be so swallowed up in the "daily round, the common task," as not to reserve some quiet, sacred hours each day, for the study of noble literature. But Dr. Heggie not only reads Carlyle, but reads him with such reverent closeness and care, such like-mindedness and sympathy, that he is well qualified to act as an interpreter of his riches to other men. This book of his, which can be confidently recommended to students of Carlyle, young or old, learned or unlearned, as well worth the money it costs, is sim-

ply a series of explanatory notes on the French Revolution. Those of us who study the Greek and Roman Classics are familiar with such helps and could, even the best of us, ill afford to dispense with them. It is astonishing that so little in this kind should have been done for our modern classics, English and French and German. The Italians have annotated Dante to any extent. Our great English poets have been, for the most part, left untouched by the pious hand of the modest and helpful scholiast. If ever there was a moment in the spiritual life of our nation, when such activity would be laudable and timely, it is now. Great original work is almost entirely wanting among us. We are in the trough of the wave; in the hollow between the peaks. For heaven's sake, let us be content for a while to be Alexandrines and to illustrate the wealth of our past which we seem incapable of increasing. Many a man who writes a futile novel might well have strength enough to produce a useful commentary. Dr. Heggie has certainly done so. He is a man of distinction and force, and of—what is no more common—honesty. He has taken a world of trouble. There is not a literary or historical allusion in the book he has undertaken to throw light upon, which he has not explained. Any one who is aware of the extraordinary range of Carlyle's knowledge, and of the bewildering, lightning swiftness, with which he often weaves it in, especially in this the most lyric of histories, will be grateful to the man who has patiently disentangled the brilliant web and shown, so far as erudition can help to show, the meaning of each thread and colour.

JOHN MACNAUGHTON.

Cornelle and the Spanish Drama, by J. B. Segall, Ph.D., (Columbia). The MacMillan Company, pp. 147.

The various literary studies that have of late years been brought out either officially, by the various American universities, or privately by some of their Alumni, have most of them a marked characteristic in common, a feature peculiar to them and the Germans. Finding that in literary criticism, whether classical or modern, the broad outlines have already been traced, and that no innovation is possible there, they have imitated the Teutonic thoroughness in dealing minutely with some side issue, or slighter point that has so far been comparatively neglected. Such a method has its points of strength and weakness. The fact, however, that it should be such an unvaried characteristic of American scholarship is to be distinctly deplored; too often the central vivifying idea is lost in the mass of detail.

The book before us is of this stamp; it has for its subject a single interesting point in the literature of France in the 17th century. For the best part of a century before Corneille's rise to fame, both the language and the letters of France were strongly reacted upon by two foreign influences, the one Italian, the other Spanish, the former tending to subtlety and affectation, the latter to bombast and "sesquipedalia verba." This double influence would form the subject of an interesting volume. So with either of them taken alone. But Dr. Segall, following the type of that characteristic scholarship I have referred to, has taken the still smaller question of the influence of Spanish models on the "Father of French Drama."

His method is also typical. He takes a certain number of plays of Corneille, seven in all, of which "Le Cid" naturally is most carefully studied, and compares them with what may be loosely called their Spanish originals. This comparison is done by narrating at some length the plots of the Spanish and the French plays in question, and then summing up with some general remarks. The result is a piece of sound, careful work, and interesting to the specialist. It is, however, more doubtful whether this book will be of much service to the average student of literature. For in it the weakness of the method is very apparent. We do not find ourselves in these pages coming into real contact either with the spirit of Corneille's works, or with the national Spanish feeling; the amount of detail tends to obscure the question how far, apart from actual imitation, the poet was influenced by the different standpoint of the literature of the Peninsula. For one who is endeavoring to study literature in this broader way, Dr. Segall's work would be valuable as giving in available form the most important data; but for the ordinary student who so often has no other resource than books, for illuminating criticism, it is too analytic, too lifeless. One point in particular we should like to have seen discussed at greater length,—the fact that Corneille seems throughout to have been at heart a Romanticist. Hence his first love for Spanish Art; hence, too, his inability ever again to attain to the freshness and warmth of life of "Le Cid."

P. G. C. CAMPBELL.

CURRENT EVENTS.

CANADA AND THE EMPIRE.

THE Imperial Conference has come and gone without answering the sanguine hopes of those who expected to see a full-blown constitution for the federation of the Empire issue from its hands.

The
Imperial
Conference.

Constitutions are not made so quickly, at least amongst English-speaking peoples. They grow, rather, and for some time the growth is a kind of undergrowth, a spreading of the roots, as it were, a development of social and economic connections, of common interests, of intercourse and exchange of counsel, things which do not at first seem to possess any direct political significance.

The resolutions arrived at by the Conference may seem to be a very meagre result indeed, considered from the point of view of the great object to be attained, yet they point clearly to that growth of economic and other relations which prepares the way for political development. The establishment of Triennial Imperial Conferences, the arrangements for Imperial ownership of the telegraphic cables, for a cheaper mail service for British goods, the resolution to consider trade between Great Britain and the colonies as coastwise trade and to close it to nations who confine their coast trade to their own ships, the approval of the principle of preferential treatment and its adoption by Canada and New Zealand, the preference to be given to the colonies by the British Government in the placing of contracts; the offers made by Australia, New Zealand, Cape Colony, Natal, and Newfoundland, to contribute towards the naval defence of the Empire; all these things are part of a growth and mean more than some advocates of Imperialism, in their disappointment, think they do, and much more than the English radical, who has lost all sense in his hatred of Mr. Chamberlain, is willing to admit that they do.

The accomplished Principal of McGill University, who has just returned from the old country, reports in rather severe language regarding our Canadian delegates, that the general impression was they

Naval
Defence.

“went to the Imperial Conference to put a drag on it, and that they succeeded in doing so.” That is a strong way of putting it, and does not perhaps make sufficient allowance for the situation. It may be true that Sir Wilfred Laurier might have acknowledged more frankly the necessity for considering some scheme of naval defence. What he said about the establishment of “a local naval force in the waters of Canada” is right enough if worked in connection with an imperial navy, that is, with the backing of the resources of the British navy.

Taken as a naval system in itself, anything we are likely to provide would hardly be of more use than a couple of revenue cutters, and would be immensely more expensive and provocative. In this, as in other respects, if Canada is to think seriously of a defensive system, she must think of it in connection with the Empire. If the civilized world had accepted, or was in the least likely to accept arbitration as a universal principle, it might be otherwise; but Canada needs only to listen to the peremptory utterances of Senator Lodge on the Alaska boundary question, and of the American press generally, to understand how far we are from an era of universal peace and arbitration.

But even the matter of naval defence involves larger issues, and really it is not easy to see how Sir Wilfred and his colleagues could have gone much farther without first letting the country know what they meant to do. It is only very recently that Canada has seriously begun to consider such questions. It may be said that there is a general feeling in favour of maintaining and strengthening our connection with the Empire, but we have not yet reached any clear ideas as to how this may best be done.

That great type of Canadian, Principal Grant, used to write and speak often enough on the future of Canada. To him it had long been clear that the greatest prospect for the development of Canadian nationality was in connection with the Empire, and of late years events have been pointing more than ever in that direction. In our day the great powers, Britain, Germany, France, Russia, and the United States, have all expanded into what the Germans call world-powers. The world-power is virtually, by reason of the extraordinary development of modern systems of transportation and communication, a new form of empire. It has acquired a great number of rights and claims beyond its own borders all over the globe, territorial rights, commercial rights, railway, industrial and financial concessions, treaty ports, coaling stations, &c. It controls immense trade areas in rich uncivilized or undeveloped countries. It has 'spheres of influence' in countries like China or Persia, more or less recognized by its rivals. It is the larger form of state or empire which the modern development of railway systems, oceanic steam-shipping, cable communication, &c., has called forth in every first-class power, and for which an oceanic commerce and a powerful navy are the indispensable conditions. The evolution of the world-power on a basis of Imperial or racial feeling is the great phenomenon of our time, just as the evolution of great kingdoms out of feudal duchies and principalities was at the close of the middle ages. The tendency is as evident in the German or Russian Empire, as in the British; only the Brit-

World-
Powers

ish empire happens to be the oldest in the field, Spain, Portugal and Holland having decayed at the centre. Even in the United States, where there are powerful traditions and considerations on the opposite side, the tendency to evolution as a world-power is evidently irresistible. The acquisition of over-sea territory, the intervention in international affairs and the ambition for a powerful navy have come as inevitably as the great combinations in modern trade have come. To rail at this evolution as the outcome of jingoism is to fail to appreciate the tendencies of the age as much as the Rural Dean does who rails at the Higher Criticism and tries to pin down Cheyne and Har-nack by a syllogism based on the Nicene creed.

These world-powers will control not only the future civilization of the world but also its markets. As the competition for trade waxes fiercer, the principle of protection or preference within the trade areas controlled by each is much more likely to be extended than diminished. It has long been the avowed policy of all of them except the British Empire. But even in Britain they are coming to it. At the Imperial Conference Mr. Chamberlain, in his admirably lucid speech, put the same ideal very clearly before his hearers: "If we chose," he said, "the empire might be self-sustaining. It is so wide; its products are so various; its climates so different, that there is absolutely nothing which is necessary to our existence, hardly anything which is desirable as a luxury, which cannot be produced within the borders of the Empire itself. And the second salient fact is that the Empire at the present time, and especially the United Kingdom—which is the great market of the world—derives the greater part of its necessities from foreign countries, and that it exports the largest part of its available produce—surplus produce—also to foreign countries. *This trade might be the trade, the inter-imperial trade, of the Empire.* . . . Now, I confess, that to my mind that is not a satisfactory state of things, and I hope you will agree with me that everything which can possibly tend to increase the interchange of products between the different parts of the Empire is deserving of our cordial encouragement." Mr. Chamberlain then went on to say that the ideal of His Majesty's Government was "free trade within the Empire"; that policy, he thought, "would hasten the development of the colonies, and fill up the spare places in their lands with an active, intelligent and industrious population," and it would "make the mother country entirely independent of foreign food and raw material." But Mr. Chamberlain also recognized that the colonies required a revenue tariff, only he thought it might be placed so as to be most helpful and least hindering to the development of the whole Empire..

Evidently something in the nature of free or preferential trade within the great areas which they control is to be the permanent condition of the great world-powers, even of the British Empire; and Canada certainly needs to keep all the hold she can get on the markets of the British Empire. To be outside of these great aggregates which are forming for the control of the commerce and civilization of the world, will mean to be outside of the stimulating influences, and more or less outside of the great resources and the protective unity which they represent; it will mean to remain in the position of a minor state really unable to protect its commerce and its capital abroad or even itself at home.

The great advantage which will always exist for Canada in a connection with the British Empire, as compared for example, to a connection with the United States, is this, that the British Empire is of so peculiar a character in its spirit of civil freedom and geographical distribution, that neither Canadian nationality nor the sentiment of Canadian nationality is really impaired by it. Nothing has struck me more than the growth of that sentiment during the last twenty years, especially amongst the generation that has grown up since federation. It is more than twenty years ago since Goldwin Smith, in his *Political Destiny of Canada*, denied the very existence of national sentiment in Canada. That eminent man could not be wholly mistaken as to the facts which he saw *then*. The growth, therefore, must have gone on, step by step, with the growth of Imperial sentiment.

Indeed it seems to me that the distinct type which the Canadian has begun to show amongst nations owes something of its distinctiveness to the fact of the connection with Great Britain. He has been largely saved by it from being absorbed and engulfed, morally and intellectually, as well as politically, by his powerful neighbor to the south. He has maintained his type distinct in face of the tremendous prestige which the true grandeur of the United States has for the thoughtful man, as well as in spite of the almost irresistible attractions which the lower features of civilization there possess for the common man. It is to the advantage of all of them that a clear Canadian type should emerge amongst the English speaking races, a type which has something of the brisk initiative and the free unconventional spirit natural to American soil, but also something of the moral equilibrium, the wholesome respect for law and order which distinguishes the Briton. Whatever happens, it may be safely predicted that the Canadian will never willingly sink his nationality in that of any other people.

Even for the French Canadian, connection with the Empire has a similar value. His racial traditions exist unmolested, honoured, under that spirit of tolerance and freedom which is the roof of the Empire. Were that roof away, it is hard to say what would ensue. The kind of growth which is promised to Canada in connection with the British Empire is of a kind which threatens him and his province less than any other conceivable development. Personally I am convinced that the best future for the French Canadian, the way in which he can do most for himself and perhaps some day most for the land from which he came, is not only to stand in with the federation of the Empire, but to stand heartily in with it, so as to win in the coming future what he won before, the respect and honour which are due to a comrade who has taken his part in the work. That turned out to be the right way before, and I think it will not be the wrong way now.

Of course there is a natural reluctance on the part of the ordinary French Canadian to trouble himself about questions of Imperial unity. He does not see why he should do it, and he has a right to have time to fully consider it. That talented French Canadian, M. Bourassa, for example, has been giving the British people his views on the question in the pages of *The Monthly Review*. He says that "the absence of racial feelings from his heart (the French Canadian's) allows him to judge more impartially the question of the relations between Canada and the Empire." It depends, M. Bourassa; feeling may open as well as close the eyes to the real character of things. From what I have understood of history it has been a valuable and even a necessary element in every wise forecast. The main point M. Bourassa makes against federation is this: The French Canadian has no interest in commercial expansion, in huge industrial systems, in the gigantic capitalisations and feverish spirit of enterprise which characterize modern life in English speaking countries. "He prefers the liberal professions, agricultural life, and local industrial pursuits," says M. Bourassa, "and, therefore, he is not anxious to participate in the organization of the Empire on the basis of a gigantic co-operative association for trade."

Fortunati nimium, evidently. If we could escape participating, M. Bourassa, it might be worth considering. When I go down to Little Metis, as I do every summer, and see the beautiful shores of your province, the great pine forests, the bays and headlands, and the noble river rolling forty miles, fifty miles broad, out to the ocean,

and find my way to the quiet little lakes back in the woods, where one can spend the day very pleasantly, toying with the rod and line and admiring the superb masses of foliage on the hills around, I have considerable sympathy with your point of view, and with your desire to keep back this ravening tide of modern progress. I have no wish to see conglomerations like the English Blackpool or the American Atlantic City planted on the shores of the St. Lawrence. But they are likely enough to come, for all that; Murray Bay has already been taken possession of by crowds of that energetic and money-spending people who represent even more than the British Canadian that "feverish concentration of capital and frantic display of financial energy" which you dislike. But it is a very different thing to wish to save Canada from a development which would bring her into line with great modern nations. The cure, the notary, and Jean Baptiste who cultivates his garden; long may they flourish uninvaded and uncorrupted by "the international competition of industry" and modern ward politics. There is no reason why they should not stand sturdily on their own paths though all the rest of the world went into commercial delirium. But you would not have all Canada, from Halifax to Vancouver, tied down to their way of thinking.

It is, no doubt, trying for a man of heart and ability to be involved in a general movement of things with which he is not in sympathy, and this is especially the case where there is an element of racial feeling in the matter. But one must try and escape from that, not by an attitude of life-long hate and opposition, which is not good for the soul, but by seeking the larger issues of the situation. It would be an unhappy fate to allow oneself to become a mere organ for the prejudices and limitations of one's province, however natural those prejudices and limitations may be. M. Bourassa must widen his sympathies so as to include that great Canada which is growing up between Lake Ontario and British Columbia.

Then there is that able politician, Mr. Tarte, who surprised us all by his sudden crusade in favour of a high protective tariff. It is curious that in spite of the charming frankness of speech for which Mr. Tarte is famous, the country never seems to be quite sure of what he is after. But I fancy his crusade had a good deal to do with the question of federation which his colleagues had been discussing at London.

Even amongst ourselves in Ontario there is a thoughtful class of men who look shyly at the political side at least of Imper-

ial unity. The old-fashioned philosophical Liberal, for one, the fol-
 lower, and almost the survivor, I may say, of
 The Philosphical Cobden and the Manchester School, still exists on
 Radical. both sides of the Atlantic, with his genuine but
 rather abstract humanitarianism, his absolute faith in Free
 Trade and distrust of State promoted schemes, his curious belief in
 the all-sufficient power of commerce and trade to save the soul of na-
 tions, and his ideal of universal peace as a field on which all national
 virtues must surely bloom and reach perfection. He has a native
 dislike of empires, military organizations, the annals of navies, and
 everything of that kind. He has been rather taken by surprise at the
 evolution of this new force making for what he calls Imperialism.
 The word has old and evil associations in his mind, militarism, Cæs-
 arism, reckless territorial expansion unjustified by previous economic
 growth, and I know not what else besides. And he has had abundant
 justification in the past for his suspicions; but I think he has less rea-
 son to distrust the Imperialism of the modern world-powers. It may
 occasion a few more small wars abroad in uncivilized or semi-civil-
 ized countries, but it seems to make for peace at home by reducing
 the number of states powerful enough to excite or engage in a great
 war. The normal relations of the great powers, as President Roose-
 velt remarks in his message to Congress, have become peaceful, and
 war is now mainly a matter of international police. Worryings and
 wranglings, entanglements and disturbances, we are not likely soon
 to get rid of, but it seems to me that they invariably tended in the
 world of the past to assume a more serious character and lead more
 directly to great wars than they do in the world of to-day. Never
 before have the leading powers been able to act so frequently and so
 steadily in concert to preserve the general peace, or at least to localize
 the disturbances. And this, too, in spite of their mutual rivalries and
 jealousies, which certainly seem to find a louder voice in the people,
 especially in a certain kind of journalism, than they do in the govern-
 ments themselves. The growth of purely moral and economic in-
 fluences may have its part in this improvement, but the evidence is
 that these forces only work effectually with the support of the new
 and greater political units of our time. There is nothing, then, in the
 new imperial developments inconsistent with the humani-
 tarian aspirations of those who look forward to the brother-
 hood of nations and the peaceful federation of the
 world under international law. On the contrary, apparently the
 only road by which we shall get nearer those ideals, is by passing
 through successively higher and wider political incorporations of
 them. Moral ideas, like religious ones, only realize themselves fully

in civilization by being embodied in some definite form of church, state, empire, or world-power. The incorporation will no doubt show a considerable decline from the perfect purity of the idea, but to reject it on that account would lead us logically to Tolstoi's attitude of opposition to all state organization.

But, after all, the old doctrinaire Liberals, although they have a number of able men, and some very eminent ones, amongst them, have no strong following on this continent. Their virtues are not of a kind which take strong root in young and vigorous democracies.

Let us go warily, then, but let us not miss good chances or discourage feasible proposals; we should do nothing hasty or premature, but let us keep facing in the right direction.

THE PRESIDENT'S MESSAGE TO CONGRESS.

The message of the President is dignified in tone and moderate in its spirit. A poetical metaphor or two in the opening sentences remind us that President Roosevelt has claims to distinction as a literary man. Speaking of the prosperity of his country, he declares that it is advancing, though there may be periods of depression; "the wave," he writes, "recedes; but the tide advances." But a state paper in these economic times is not a good field for the display of diction, and the President soon plunges into matters which require cautious forensic language rather than poetic metaphors. First, he deals with the great question of trusts. On this subject his utterance is prudent, judicial, and on the whole reassuring to the great business and financial circles. These big aggregates, he says, are an inevitable development of modern industrialism, and the attempt to destroy them might displace the country from the position which it "has won in the leadership of the international industrial world." On the other hand, he believes that "the monopolies, unjust discriminations which prevent or cripple competition, fraudulent over-capitalization and other evils in trust organizations can be prevented under the powers possessed by Congress," and if these be insufficient, he declares that "assuredly, we should not shrink from amending the constitution so as to secure beyond peradventure the power sought." I suppose it is some traditional idea of the style of earlier American state documents that induces the President to use such formal and purely literary phrases as "beyond peradventure," "entire body politic," and the like, phrases which contrast so extremely with the diction of modern American writers. At any rate, the President means business, for I notice a bill has been since introduced to empower Congress to deal fully with the Trusts. It is a question, however, if Congress will prove itself any more effective than the individual

states in drawing and asserting a legal line between the legitimate use of power for controlling sources, transportation and markets, possessed by these huge aggregations, and such methods as those by which the Standard Oil Company crushed out the independent refineries of Cleveland, or the ruinous underselling by which some great companies terrorize smaller establishments into their arms. At any rate, the President has laid down the general principle clearly and justly, thus moderating the tendency to excessive and extravagant statements which is so baneful when a problem becomes a question of parties or sects.

On the question of the relation of capital and labour the President holds the balance with equal prudence. Both have a right to combine, he points out, "it is an era of federation and combination. . . . Both can do much good, and . . . they can both do evil." Neither should be attacked except for what is bad in each. "Each must refrain from arbitrary or tyrannous interference with the rights of others." The President seems to feel that possibly the country at large needs more education as to the rights of capital in this respect than as to the rights of labour.

The disorderly condition of Venezuela and the delicate question of foreign interference there are not expressly mentioned, but there are several passages in the President's message which evidently have their reference here. "It is earnestly to be hoped that all of these countries (of tropical America) . . . will improve their material conditions by recognizing that stability and order are the prerequisites of successful development. . . . It behooves each one to maintain order within its own borders and to discharge its just obligations to foreigners. *When this is done*, they can rest assured that, be they strong or weak, they have nothing to dread from outside interference." That, I should say, is a very fair and timely hint, as to the way in which the President means to interpret the Monroe doctrine in the case of Venezuela. It can hardly have any other meaning than that the United States will not object to Germany and Britain collecting their dues and enforcing their rights. But for all that there may be a flurry of national sentiment in the States. In another part of his message the President expressly affirms the general principle of the Monroe doctrine, "The Monroe doctrine should be treated as the cardinal feature of American policy," and he adds suggestively, "it can be backed up only by a thoroughly good navy." . . . "There should be no halt in the work of building up the navy."

Amongst other things, he mentions the negotiations proceeding for the building of the Panama canal. This will be, he says, "a greater engineering feat than has yet been accomplished during the

history of mankind." That ought to be enough to settle it in the minds of our American cousins. To break all records, from the Tower of Babel and the pyramids down to the Suez canal, the President knows no American could resist that.

The President's message is a wise and politic utterance, pacific and decidedly conservative in its spirit, and contains many a quietly educative sentence for the ear of the people to whom it is addressed. It is not a mere state document or a party manifesto; it is rather the voice of the teacher instructing his people, above all the tumult of party defamation and yellow journalism and ward politics, as to how things really are. Only as the editorial writer of the *Montreal Star*, with his fine wit, said, the other day, "The great nation to the south of us makes very plausible and admirable professions, but on the whole manages to give the world no little uneasiness." Well, no doubt, there are many in the United States who are very ready to wave Old Glory defiantly in the face of the world; some of them will perhaps find the President's message far too full of old world caution and conservatism. The New York *Evening Sun*, for example, declares, in that fine Bowery idiom which so fetches the Democratic wards, that it is "seven pounds lighter than a straw hat." But the wiser American recognizes that his country has become by force of circumstances and its own development a world-power, and necessarily an upholder of international comity and obligations.

THE PACIFIC CABLE.

The Pacific Cable service was established on 1st Nov. last. It is the latest of those great improvements in our Postal Service which have distinguished the Victorian age. It is the last, too, which can be dated within the late Queen's reign, and it marks the beginning of a new evolution in the direction of state-owned cables within the Empire.

This generation has become so much accustomed to developments of every kind that it takes them almost as a matter of course. Yet it is not so very much over a century since the mail-coach took the place of the man on horseback, and, sixty years ago, when you spoke of the telegraph you meant a semaphore board. Even in our day, however, the memory of Rowland Hill and his great fight for the penny postage system still survives. It was in 1837 that he began to advocate the establishment of a uniform penny-postage rate within the United Kingdom. Official apathy and opposition were strong in those days, and eminent authorities in science and economics were very doubtful; but Mr. Hill's proposal pointed to a crying need at a time when

there were twenty or thirty different rates of postage, according to distance, within the kingdom, and the unfortunate recipient of a heavy packet might have to pay twenty or forty shillings for matter which he sometimes did not want. Public opinion came rapidly to his side, and in 1840 the penny-postage system came into operation throughout the kingdom. Rowland Hill, twenty years afterwards, became Sir Rowland, and received a parliamentary grant of £20,000 for the part he had taken in the great work.

We have seen many advances since that time. In particular, the development of ocean steam-shipping and the establishment of ocean telegraphy led to an immense development of the Postal service all over the globe. The scientific and economic value of these achievements were evident to everyone; not so evident at the time, nor so fully appreciated, was the political part which they were destined to play in giving cohesion and a stronger sense of unity to the various parts of the wide-spread British Empire. But we can now see that they have been the indispensable material conditions for the strong growth which has taken place in that direction.

Canada's part in this development has of late been a conspicuous one. The establishment of the uniform penny-postage rate between any two parts of the Empire owes much to the stand taken by Sir William Mulock, in its favour. And now we have got the state-owned Pacific cable binding the distant parts of the Empire together by a line which is under their joint proprietorship and control. The credit of having initiated this last great enterprise is due to Sir Sandford Fleming, who, as far back as 1879, submitted to the Canadian government a plan for spanning the Pacific Ocean by electric cable and with the support of the Ottawa Chamber of Commerce, continued strenuously to urge its adoption at the various Imperial Conferences and on all fitting occasions.

The Pacific Cable is a long step towards the establishment of a complete system of state-owned cables within the British Empire. The economic and political importance of such a system can hardly be overrated. It would provide the most convenient, the speediest and cheapest, and, in the event of war, the securest means of communication between the different parts of the Empire. Mr. Charles Bright, a well known cable engineer, in an address made the other day to the London Chamber of Commerce, advocated strongly the adoption of a universal shilling rate within the Empire, and that improvement, no doubt, will come in due time. Readers who wish to know exactly what has been done, and what still remains to be done in connection with this scheme of a Pan-Britannic service, ought to purchase a book which will shortly be issued by the

publishing firm of George M. Morang & Co., Toronto. Its title is "The All Red Line"; it is edited by Mr. George Johnson, and has amongst its contributors Mr. Le Sueur, Mr. F. Hamilton, and other well-known Canadian names.

JAMES CAPPON.

One of the most interesting economic problems before business men in America, at the present time, is the possible avoidance of a re-actionary period of depression and acute crisis as the natural sequel to the present good times. The Anglo-Saxon world **Must we** in particular has enjoyed a wave of prosperity of unusual **have a** duration. It is only within the last ten years or so that **Crisis ?** business men have come to recognize the significance of the fact that, for the past century good and bad times have moved in regular cycles. However, it is, at first sight, somewhat singular that just when this fact has come to be recognized in business circles it should tend to prove itself untrue. Yet on closer investigation we may discover that the very turning of public attention to the conditions which have brought about the alternate periods of inflation and depression in the past, may lead to their modification, or possible abolition, in the future. Though ups and downs of various kinds appear throughout history, yet the periodic commercial crisis is a phenomenon peculiar to the economic development of the nineteenth century. It has been most pronounced where manufacturing and commerce were most actively carried on, as for a long time in England, later in the United States, and recently in Germany. Taking a glance at the more important factors in the movement from inflation to crisis, we get in outline a process of the following character: Beginning with the rise of good times as our starting point, we observe a growing confidence in commercial stability and a tendency to adopt a more liberal and enterprising attitude towards industry and commerce. People are more and more willing to buy goods, and to invest in new undertakings. But this means an increased call for goods for ordinary consumption and an increased need for goods as capital. These increasing markets more than justify the modest expectations of the producer, the trader and the carrier. Business confidence is greatly stimulated, and confidence, like despair, once fairly started, soon becomes epidemic. When the movement sets in towards either extreme the psychological element in the trade cycle is of more importance than anything else. With growing markets and high prices enterprise becomes reckless. The very inflation, no matter how ill-advised for the future, still further stimulates trade for the present,

and, in the effects upon markets, justifies for the time its own confidence. Inflation being the order of the day, the promoter and speculator reap their harvest while business caution is off duty, or asleep. Not only are hopeless schemes floated, but even in legitimate lines the normal and reasonable needs of the country are greatly overstocked. A few striking failures tend to awaken the community from their dream, and a halt is called in the onward movement. But even when the tide has turned, every day sees new industries offering their wares and services which had been in preparation for an inflated demand, while every day sees the demand shrinking steadily as the actual situation begins to dawn upon the people. Thus, just as expansion fed expansion, so contraction starves contraction. Where numerous independent concerns are each working for its own individual interest, it soon becomes evident that only those who can save themselves quickly have a chance for life. But the rush for safety unnerves even the more cautious, and the final crisis is at hand. The culminating point is the blind stampede which sweeps to destruction, not merely the weakling and the parasite, but many a normally sound business as well, and paralyzes trade for months.

Now all this has come about in due course during the last couple of years, in the newer industrial districts of Europe, with Germany as a centre. These districts cannot suffer without putting a certain check upon the progress of those countries which trade extensively with them. Hence, to a certain extent, Britain has suffered with Germany and the rest, and, in a lesser degree, America. But, so far as relates to their domestic conditions, the depression of the past two years has not greatly affected the Anglo-Saxon world. There are two chief factors which work for safety in those regions. First, there is the general diffusion of a sounder knowledge of economic relations and movements, and, secondly, there is an increasing co-operation and community of interest among those who are chiefly engaged in actual business, as distinguished from speculation. The great consolidations of economic enterprises, provided they are sound in themselves, have the power to check ignorant and miscellaneous expansion, which at once stimulates over-production and leads the way in panic-stricken contraction. Thus, both the psychological element, with its sentimental alternatives of elation and fright, and the economic element with its alternative facts of over-production and ruinous competition, may be greatly curtailed. As yet, however, the speculative element, fed and encouraged by over-capitalization and having only a secondary connection with the actual business of the country, remains as the breeding-ground at once of irrational inflation and of irretrievable collapse. It is doubtless too much to expect

that we shall be able to pass in one decade from the old to the new system, but it remains to be seen how far the new forces may be able to mitigate the severities of the crises of the past when trade slackens with the return, say, of a poor harvest.

The recent coal strike, whose effects have been felt in Canada quite as much as in the United States, is an economic and social phenomenon of no ordinary significance. It very forcibly illustrates the almost absolute dependence of society upon its own economic organization. Not so long ago the people of America supplied, from local sources, their domestic fuel needs. Now, practically every city and most of the towns are dependent upon great central organizations of capital and equally centralized organizations of labor, for this elementary requisite of life. When, therefore, the supply is interrupted by a great struggle between the miners and their employers, we are forcibly reminded of our very vital interest in matters quite beyond the borders of our own country.

The purely economic features of the strike have been much canvassed, especially the questions of wages, hours and standards. But what has not been so fully recognized is the fact, that the most fundamental and important problem in the mining regions is not an economic, but a social one. No amount of increase in wages and no shortening of hours will bring peace and comfort to the homes in many of the typical mining regions, unless the miners can be induced to adopt some higher standard of social life than that which prevails among a great number of them. Without that, improved wages and shorter hours will simply multiply the facilities for many to degrade their lives and increase the wretchedness of their families. As a matter of fact, in many regions where wretchedness is most prevalent, the wages obtained, estimated on the basis of the simpler necessities and comforts of life, are greater than are obtained by many respectable laborers in other parts of the United States and Canada. There is indeed an urgent need in the mining regions for missionary work of a social and moral kind.

Though Mr. Mitchell, the leader of the strike, has shown himself to be a man of unusual shrewdness and capacity, comparing quite favourably in these respects with his capitalistic opponents, yet both his methods and his claims appear to be inconsistent, alike with individual liberty and the safety of society. The irresponsibility of the organizations which he represents, and the impossibility of committing them to any agreements which they might not repudiate with legal impunity within a week, render their claims to official recog-

dition inconsistent with the basis of modern society. Equally inconsistent with social stability is the claim, acted upon for months, that they have the right to entail suffering and inconvenience upon the greater part of the community, for the merely selfish purpose of coercing a few members in it; and also the right by tyranny, threats, and even violence, directed against free labor, and by various other methods, to prevent the community from getting an indispensable article which the miners had refused to supply. The state cannot, indeed, in a free country, force people to work if they do not care to do so. And yet if, in declining to work, they are violating contracts, or if their refusal is the result of a pre-arrangement to deprive law-abiding citizens of a necessary element of life, then at least such persons should be liable to have the character of their actions tested by a suit for damages. Above all, if any one may claim the right to be free from compulsion to labor, he must also admit the right of others to perform the work which he declines to do. Yet, while the trade unions claim for their members the right to personal liberty, in many cases, and among them the late coal strike, they refuse to concede a like right to others, whether they be employers or fellow workmen. The miners may, indeed, have had grievances both numerous and well-founded, yet society finds it necessary to adopt the principle that no individual, or number of individuals, can be permitted to redress a personal grievance by methods which will disturb the peace or violate the rights of society. Now, this principle cannot be permitted to be unceremoniously trodden under foot by trades unions more than by any other corporations. If, on the other hand, the unions have wrongs which cannot at present be redressed by legal process, then let them do as other interests in like condition, and seek to obtain the necessary laws, meantime respecting such laws as we have.

ADAM SHORTT.

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THE ORIGIN AND PRESENT POSITION OF THE PRIVY COUNCIL.

THIS body is the Supreme Court of Appeal for the British Dominions beyond the seas.

"Cases come before it from all quarters of the globe, and it has to act as the final interpreter of almost every known system of law—English, Colonial, Hindu and Mohammedan—and even the still more intricate system of customary or tribal law, by which most of the native races are governed." A more multifarious jurisdiction than that of the Privy Council it would be difficult to imagine.

"When cases are appealed from the highest courts in India to the Privy Council in England, that respectable body determines the true construction to be put on the Koran and the Islamic Traditions, or on passages from the Mythical Manu, in the same business-like way as it would the meaning of an Australian Statute."

The following anecdote is often quoted as showing the faith in this body, which has been inspired into the distant peoples; it is told of a traveller who had penetrated into a remote part of India that he found the natives offering up a sacrifice to a far-off but all-powerful god who had just restored to the tribe the land which the government of the day had taken from it.

He asked the name of the god. The reply was: "We know nothing of him but that he is a good god, and that his name is the Judicial Committee of the Privy Council."

Every intelligent citizen should know something about this great central tribunal which, while knitting together the uttermost parts of the king's dominions, it is yet strictly speaking not a court at all. Its jurisdiction arises simply out of the right of every British subject, who believes that a wrong has been done to him, to petition his sovereign personally for redress.

It is proposed to discuss briefly in this article the origin, the present position, and the possible future of this great court.

The origin of the jurisdiction of the Privy Council is a question upon which learned writers differ widely. Partly by reason of the absence of records, partly by reason of their ambiguity, partly owing

to the confusion of names in such materials as we do possess, partly from the fact that the same institution has from time to time performed different functions and in each case under a different name, the history of the Council is involved in great obscurity and perplexity.

The Judicial Committee is a development of the *Curia Regis*, or *Aula Regia*, and represents the earliest and most ancient of our Judicial institutions, the origin and parent of all the rest. The Jurisdiction of the King in Council—undoubtedly the earliest exercised by the sovereign—was, according to the best authorities on our legal history, the origin of all the Courts of Justice in the realm; in Sir Matthew Hale's words the "common mother" of those great Courts, the Chancery, the King's Bench, the Exchequer, and the Common Pleas, which for so many ages exercised their jurisdiction, and have now been united in the High Court of Judicature.

This jurisdiction was a necessary consequence of the great fundamental principle of our law and constitution that the sovereign is, over all persons and in all causes within the dominions, supreme, and that it is the first duty of the sovereign to see that justice is administered to all his subjects; the exercise of judicial power is a royal prerogative. In early times when sovereignty was personal, and it was laid down that the first duty of the sovereign was to judge. Originally he doubtless really presided, and administered justice. This duty was naturally exercised in council, and hence the jurisdiction of "the King in Council," which was the earliest exercised and still continues to exist. (Finlason, p. 1, 2.)

We read of "divers councils" with which "for the better discharge of his royal duties, the maintenance of his dignity, and the exertion of his prerogative the law hath armed the king," but Blackstone tells us that: "The principal council belonging to the sovereign is his Privy Council, which is generally called, by way of eminence, the Council. And this, according to Sir Edward Coke's description of it, is a noble, honourable, and reverend assembly of the king, and such as he wills to be of his privy council, in the king's court or palace. The sovereign's will is the sole constituent of a privy councillor; and this also regulates their number, which of ancient time was twelve or thereabout.

The duty of a Privy Councillor appears from the oath of office, which consists of seven articles:—1. To advise the king according to the best of his cunning and discretion. 2. To advise for the king's honour and good of the public, without partialty through affection, love, meed, doubt, or dread. 3. To keep the king's council secret. 4. To avoid corruption. 5. To help and strengthen

the execution of what shall be there resolved. 6. To withstand all persons who would attempt the contrary. And lastly, in general, 7. To observe, keep, and do all that a good and true councillor ought to do to his sovereign lord."

"The council was nothing more than an assembly of royal officials. It made no claim to independent authority. Its very existence was derived from the king's pleasure and hence it was dissolved, *ipso facto*, by his demise. The council at all times acted in the king's name, with a scrupulosity which reaches the height of pedantic absurdity, when Henry VI. (at the age of five years) is made to assure the chancellor that if we are negligent in learning, or commit any fault, we give our cousin (Earl of Warwick) full power, authority, license, and direction to chastise us, from time to time, according to his discretion, without being impeded or molested by us or any other person, in future, for so doing." (Dicey's Privy Council, p. 29.)

It is not until the reign of Henry VI. that the term "Privy Council" makes its appearance, applied to a select body distinct from and a development from the general or "ordinary" council. (Dicey, p. 45.)

It may be noted in passing that the number of Privy Councillors is now indefinite. No inconvenience arises from this, as, with the exception of such of them as are called *Cabinet Ministers*, the Privy Councillors are not in modern practice ordinarily summoned to advise the sovereign on affairs of state.

The cabinet ministers (or cabinet council) are those Privy Councillors who, being more immediately honoured with the sovereign's confidence, actually conduct the business of Government. It is this body that is understood when mention is made of the "King's Administration," though strangely enough it is a body unknown to the law and one whose members are never officially made known to the public, nor its proceedings recorded. (2 Steph., Com. p. 451.)

The pressure of state business soon made it impossible for the sovereign to perform all his duties in his own person. By degrees, as need arose, many of the matters which were once dealt with by the King in Council were delegated to regular courts, as "emanations from the parent jurisdiction of the King in Council." The power of the Court of King's Bench to supervise the proceedings of other tribunals, even of the Judicial Committee itself was derived from the fact that the King himself was supposed, theoretically, to be present at and to take part in its decisions, which were pronounced as if *coram ipso Rege in consilio*.

When regular courts of law were established there arose a great

jealousy at the jurisdiction of the King in Council, which then became extraordinary, and continued to be exercised, as it originally had been, as a kind of extraordinary and corrective jurisdiction to prevent failure of justice in the ordinary courts by fraud or violence, corruption or intimidation; and especially by combination and conspiracy to obstruct or prevent justice. To some extent this extraordinary jurisdiction was salutary and necessary. (Finlason, pp. 6, 7.)

In the reign of Charles I., first by the Petition of Right in 1628, and afterwards in 1640, any judicial jurisdiction of the council in matters arising within the realm was distinctly declared illegal. The consequence was that the King in Council could only exercise appellate jurisdiction over the colonies or dependencies, or foreign dominions of the crown. (ib. p. 37.)

These appeals came to the King in Council from necessity—there being no other tribunal open to them, and by virtue of the fundamental principle, that it is the duty of the crown to see that justice is administered to all its subjects.

“The general rule with regard to appeals from the colonies, appears to be, wherever no limitations have been imposed upon them by orders in council, the charters of the courts, instructions to the governors, or acts of parliament, they are received on petition to the King in Council, from all courts in the King’s dominions abroad, on the ground that it is the right of subjects to appeal to the sovereign to redress all wrongs done to them in any court of judicature.” (2 Knapp’s P. C. Reports, App. IV.)

The appeals were heard before a committee of the council for that purpose, which reported to the King in Council its decision thereon.

This committee was composed solely of the judicial or legal members of the council, and assumed in all respects a judicial character.

It really was a “Judicial Committee,” though not so designated in any statute.

In the year 1828, Lord Brongham, when advocating the transfer to the “King in Council” of the powers of the Court of Delegates, which then dealt with appeals in ecclesiastical and maritime causes, used the following language in regard to the Judges of the then Judicial Committee of the Privy Council:—“They are made the Supreme Judges in the last resort, over every one of our foreign settlements, whether situated in the immense territories which you possess in the East, where you and a trading company rule together over not less than seventy millions of subjects—or established among those rich and populous islands in the Indian ocean and which form the Eastern Archipelago—and have their stations in those lands, part lying within

the tropics, partly stretching toward the Pole, peopled by various castes, differing widely in habits, still more widely in privileges, great in numbers, abounding in wealth, extremely unsettled in their notions of right, and excessively litigious, as all the children of the New World are supposed to be, both from their physical and political constitution. All this immense jurisdiction over the rights of property and person, over rights political and legal, and over all questions growing out of so vast and varied a province is exercised by the Privy Council unaided and alone."

In 1833 an act was passed which took away from the Privy Council as a whole the judicial powers which it had acquired in regard to colonial appeals, but which in fact the whole body had not exercised, and assigned them to a special committee called "The Judicial Committee."

"Thus, statute has produced the same effect upon the Council's legal authority which custom has had on its political powers. In each case the functions of the whole body have passed into the hands of a smaller committee, connected with the Privy Council by little more than its name."

"Out of the ancient judicial functions of the crown and of the council which advised the crown, functions which a century ago seemed lapsing into desuetude, there has been evolved a new system of judicature.

A body called the Judicial Committee of the Privy Council, somewhat resembling the consistory of the Roman Emperors, has been created and now acts as a Supreme Court of Appeal for all the transmarine possessions of Britain, whether Indian or Colonial." (Bryce, *Studies*, I., p. 172.)

The political powers of the Privy Council have long centred in the Cabinet, which is in theory nothing but a Committee of the Privy Council, and yet has in reality nothing whatever to do with it. "Thus the extraordinary result has taken place, that the Government of England is in the hands of men whose position is legally undefined; that while the Cabinet is a word of every-day use, no lawyer can say what a Cabinet is; that while no ordinary Englishman knows who the Lords of the Council are, the Church of England prays, Sunday by Sunday, that these Lords may be 'endued with wisdom and understanding!'" (Dicey, *The Privy Council*, p. 143.)

The appellate functions had, as we have seen, been previously exercised by what was in fact a Judicial Committee of the Privy Council, but Lord Brougham speaks of the Act of 1833 as if he had been the creator of such a Committee. "When I established it," he says, (*British Constitution*, p. 378), and he speaks with a parent's satisfac-

tion of "the universal testimony borne to the excellent working of the Judicial Committee for Appeals in Colonial causes," as showing the "expediency of retaining that appellate jurisdiction on its present footing and also of taking its construction as an example." (ib. p. 364.)

It may be interesting to compare with this his account of the working of the House of Lords as an appellate tribunal of his times. "One branch of the Legislature is the Supreme Court of Justice—civil as well as criminal. The House of Lords is the Court of ultimate Appeal in all questions of law whatever, provided they are raised on any record, and in all questions of fact, and all questions of law whatever, which arise in courts of equity. Every English peer, on attaining the age of twenty-one years, has as much voice on all these great questions as the Lord Chief Justice of England, or the Lord High Chancellor himself. Such is the theory of the constitution and it may on any one occasion be made the practice. In practice, however, all is quite different. The usage is, and for above a century has been followed with a single exception, for all but the law Lords to abstain from taking part. Hence only four or five of the Lords, and generally speaking only one—the Chancellor—exercises this high jurisdiction. The appeal too, from the Lord Chancellor's decrees is heard by himself; and until very lately, he alone sitting regularly in the house of which he is speaker or president, all the appeals from himself were disposed of by himself. For five years Lord Eldon sat alone in judgment on the appeals from his own decrees. That they were few in number may be easily imagined." (*British Constitution*. pp. 359, 360.)

THE PRESENT POSITION OF THE JUDICIAL COMMITTEE.

One of Lord Brougham's great aims in establishing the Judicial Committee was to have in it Judges "who should be men of the largest legal and general information, accustomed to study other systems of law besides their own, and associated with lawyers who have practised or presided in Colonial courts."

It is only recently that the latter part of his ideal has been to any extent realised, by the appointment (in 1897) of Sir Henry Strong, Chief Justice of the Supreme Court of Canada, the Chief Justice of the Cape of Good Hope, and the Chief Justice of Southern Australia, to be Privy Councillors. They thus became members of "The Judicial Committee" by virtue of the Judicial Committee Amendment Act, 1895, which provided that any person being or having been Chief Justice or a Judge of the Supreme Court of the Dominion of Canada, or of a Supreme Court in any Province of Canada, or of the Australian

Colonies, or of the Cape of Good Hope or Natal, who is a member of the Privy Council, shall be a member of the Judicial Committee of the Privy Council. Such members are not to exceed five at any one time.

The composition of the Judicial Committee has been altered from time to time. It now consists of the Lord President, such members of the Privy Council as hold, or have held, "high judicial office," the Lords Justices of Appeal (whose number is limited to four), and two other persons being Privy Councillors, whom the King may appoint by sign manual warrant. Besides these, there may be two paid members who have held the office of Judge in the East Indies.

In addition to these, as already mentioned, the Chief Justices of Canada, Cape Colony and South Australia, have been appointed to the Committee. It is necessary that four members should be present at the hearing of a cause.

In Safford and Wheeler's new book on Privy Council practice, the learned authors use the following language in regard to the Judicial Committee as at present constituted:—

"With this one exception (i. e. India) it is difficult to see in what way a stronger tribunal can be constituted than the present Judicial Committee of the Privy Council. Beyond including among its members all the Judges of the House of Lords, it comprises eminent Judges from the Court of Appeal and the High Court of England, from Ireland, from Scotland, and from India and the leading colonies, and certain illustrious laymen. Its authority is probably unique. Its jurisdiction is undoubtedly more extensive, whether measured by area, population, variety of nations, creeds, languages, laws or customs, than hitherto enjoyed by any court known to civilization."

The stranger seeking for the habitat of this august tribunal is surprised when directed to a low, shabby looking building in Downing Street where its sittings are held.

The Court holds its sessions in a very unpretentious room upstairs, the acoustic properties of which are poor.

"The Councillors present do not wear wigs or robes; they sit not as a bench of Judges sitting in state, but as a small group of elderly gentlemen in plain clothes on either side of an oblong table, separated from the rest of the room by a wooden barrier, in the middle of which is placed a desk (like that from which an Episcopal clergyman reads 'the lesson') and from behind this Counsel, attired in gowns and wigs, addresses the court."

This appellate tribunal sitting "in a shabby room up a dirty staircase off Downing Street" with its wide jurisdiction and complex appeals, maintains the even balance of civil procedure and criminal jus-

tice over a fifth of the human race and for a fifth of the territory allotted to man on this planet.

The following extract from a letter written, now many years ago, by a Montreal advocate, giving his impressions of the Privy Council, is still of interest :—"L'on n'est pas formaliste au Conseil Privé. Les Juges siègent habillés comme de braves bourgeois, dans la vie ordinaire; c'est-à-dire que la plupart portent des pantalons gris plus ou moins foncé. Sir Robert Collier portait une cravate grise. Tous les Juges avaient un surtout (walking coat) noir. Le greffier lui-même avait un pantalon gris. Les *Solicitors* assistent en cravates de couleur. En fin l'impression que j'ai rapportée du conseil Privé, c'est que c'est un beau tribunal arbitral, éclairé par les plus hautes lumières de la science générale, appliquée aux conditions les plus variées de l'humanité, inspiré par nul autre sentiment que celui d'être juste et parvenant à ses fins, sans s'embarrasser d'un formalisme qui n'est qu'une concession aux faiblesses des hommes.

Mais hélas! C'est une Justice qui coûte cher! C'est un luxe qui n'appartient qu'aux riches, ou à ceux qui jouent tout pour tout." (2 *Revue Critique*, 467.)

This is not unlike the verdict of Captain Fullalove in "Hard Cash." In rambling over London with the colored man Vespasian, whom he was trying to educate and enlighten, they passed Westminster Hall. The Captain pointed it out to Vespasian, with the remark, "There's where you can buy British justice. It comes high, but it's prime."

Limits have been imposed by various colonial legislatures as to the nature and value of the cases in which an appeal to His Majesty in Council is allowed, but when it is allowed it takes the form of a petition to the sovereign, and the order upon the petition or appeal is made by the King in Council. The petition is addressed "to the King's Most Excellent Majesty in Council." In the Province of Ontario appeals lie either (1) direct from the Court of Appeal for Ontario "in cases where the matters in controversy exceed the sum or value of \$4,000, or where the matter in question relates to the taking of an annual or other rent, customary or other duty, or fee, or any like demand of a general and public nature affecting future rights of what value or amount soever the same may be." (R.S.O.C. 48, §1.) Or, (2) from the Supreme Court of Canada, by special leave of the Privy Council. There is no appeal as of right from the Supreme Court, but the royal prerogative is preserved.

This special leave is very rarely granted, and only in "cases of gravity involving matters of public interest, or some important question of law, or affecting property of considerable amount, or where

the case is otherwise of some public importance, or of a very substantial character." There is no appeal to the Judicial Committee from the Courts of Canada in criminal cases. (Criminal Code, Sec. 751.)

In addition to its ordinary appellate functions, the Privy Council has authority under 3 & 4 Will IV. c. 41, to consider "any other matters whatever" which may be referred to it by the crown, and matters of great importance have from time to time been referred to it under this power.

"The result of the deliberations of the Committee is recorded, not in the form of the decree of a Court, but merely as 'humble advice' to His Majesty to take certain action. It is needless to say that His Majesty always does act on the advice given, but the whole procedure is a curious illustration of the affection of the English constitution for old forms long after the substance has completely changed.

The advice of the Judicial Committee is a statement at length, contained in a single judgment read in open court, of the reasons which determine them in "humbly advising" the King to give effect to their decision. These reasons are not stated in the report to the King; this merely sets forth their conclusion and the method proposed for giving effect to it. If there is any difference of opinion no notice is taken of it in the judgment or in the report to His Majesty.

This is not a mere matter of policy. It is one of the "orders to be observed in assemblies of council" made in 1627 and runs thus:—"In voting of any cause the lowest Councillor in place is to begin and speak first, and so it is to be carried by most voices, because every Councillor hath equal vote there; and when the business is carried according to most voices, no publication is afterwards to be made by any man how the particular voices and opinions went." Anson, *Constitution*, p. 471.)

In the case of *Ridsdale v. Clifton*, (1877, 2 P. D. 276) Chief Baron Kelly maintained that he had the right to let it be known that he did not agree with the report; this right was disputed by the Lord Chancellor. The action of the Chief Baron led to a voluminous controversy, but by an Order in Council of 4th February, 1878, the old order of 1628 was confirmed, and it was directed that the "ancient rule and practice of the Privy Council" should be observed in the Judicial Committee, and that no publication should be made how the particular voices and opinions went.

WHAT WILL BE THE FUTURE STATUS OF THE TRIBUNAL.

Some change is inevitable. The position of the two great appellate tribunals of the Empire is illogical and inconsistent. Some of

the anomalies have been pointed out by Mr. Justice Hodges (in an article to be again referred to) as follows:—

"There are at present two tribunals of final appeal, the House of Lords and the Judicial Committee of the Privy Council; the former may be described briefly as the Home, the latter as the Indian and Colonial Court of Appeal. To the former are sent appeals from the Courts of England, Ireland, and Scotland; to the latter appeals from India and the colonies. Each tribunal is independent of the other, each is final. Each states authoritatively and as a court of last resort what the law is. No matter how utterly a decision of the Privy Council may differ from one in the House of Lords, there is an end of the matter. The Judicial Committee's decision is final. A proposition may be affirmed as law by the Judicial Committee; it may be negatived by the House of Lords. The law is as the Judicial Committee declares it, and also as the House of Lords declares it. Theoretically the affirmative and negative of the same proposition are each true for different parts of the Empire. And there is no judicial authority to get rid of the absurdity."

As a result a law suit between a merchant resident in Liverpool and one resident in Toronto may be finally determined in favour of the Liverpool merchant if he brings his action in England, in which case it would go in the last resort to the House of Lords, or in favour of the Toronto merchant if he institutes proceedings in Canada, in which case the ultimate appeal may be to the Privy Council. It is exceedingly unsatisfactory that the final decision in a legal controversy should depend upon where the proceedings happen to be commenced. *Misera est servitus ubi Jus est vagum.*

Moreover, the Judicial Committee of the Privy Council, "that far-reaching engine of Imperial Justice, which examines impartially the legality of the actions of the Queen's meanest subject and the Queen's Imperial Government," is yet, strange to say, not on a level for practical purposes with the House of Lords, and its decisions, though regarded with respect, are not considered as binding by the Municipal Courts of Great Britain and Ireland.

Bramwell, L. J., in giving judgement in a case in the Court of Appeal thus refers to a decision of the Judicial Committee relied on by Counsel: "We think that case justifies his argument and is in point. We are not bound by its authority, but we need hardly say that we should treat any decision of that tribunal with the greatest respect, and rejoice if we could agree with it. But we cannot." (*Leask v. Scott*, L. R. 2, Q. B. D. 376.)

And the Judges of the Exchequer Division in Ireland speak of a decision of the Privy Council as one which "possibly, were there no

decision the other way," they would "from courtesy, defer to," but as one "which, in strictness, is not binding on this Court." (*Bell v. Gt. Northern Railway Co.*, 26, L. R. Ir. 428. See also: *Smith v. Brown*, L. R. 6, Q. B. 736. *Dulieu v. White*, 1901, 2 K., B. 669.)

So, *e converso*, judgments of the House of Lords are not binding on colonial courts. This is pointed out in the case of *Healy v. Bank of New South Wales*. (24 Victorian L. R., p. 694.)

"We are quite conscious (says Mr. Justice Williams) "that in later cases the House of Lords has not apparently applied the same rule; but while decisions of the House of Lords are justly entitled to our highest respect, they are not binding on us. Those of the Privy Council are."

Of course" (says Mr. Justice Holroyd), "if the Privy Council should alter its opinion, we should have to alter our practice in the same way, but until that happens we have to follow our own practice, and not to follow the opinion of the House of Lords."

In June, 1902, a conference met in London to discuss measures looking to the strengthening of the Final Court of Appeal for the colonies. At the request of Mr. Chamberlain, the various colonial governments appointed delegates for that purpose. A suggestion had apparently been made in some quarters that four additional Law Lords should be created, with seats in the House of Lords as well as on the Judicial Committee, these to be chosen by the self-governing colonies. As might have been expected, this proposition, to which there are very strong objections, did not commend itself to the Canadian Government, which expressed itself as not dissatisfied with the manner in which the Judicial Committee is at present constituted and also stated that in their opinion the "creation of the four Colonial Law Lords suggested would not inspire any additional confidence in the Judicial Committee." As a result of the conference, the majority of the delegates made the following recommendations:—that appeals continue to lie to the King in Council; that appointments to the Judicial Committee should be made from time to time from the colonies, both crown and self-governing, the appointees to vacate any judicial office which they might hold at the time of their appointment to the Judicial Committee; the selection not to be restricted to Judges and ex-Judges; the appointment to be for life or for a term of years, with provision for suitable salaries and pensions.

The New Zealand representative (Sir James Pendergast) did not concur in the recommendation as to colonial appointments, being unable to find "sufficient reason for any colonial representation, at any rate from colonies where the legal systems are substantially the same as that of England."

Mr. Justice Hodges, of the Supreme Court of Victoria, (representing the Commonwealth of Australia), also dissented in an elaborate memorandum, in which he urged very strongly, that instead of the present system of separate courts for home and colonial appeals, the House of Lords and the Judicial Committee, the two should be fused and should constitute "His Majesty's Imperial Court of Final Appeal" for the whole empire..

This proposition he has since embodied in a magazine article already quoted from.

Mr. Chamberlain, in a subsequent despatch to the different governments represented, has summarized the proceedings of the conference and pointed out that it would be impossible without practical unanimity on the part of the colonies in their recommendations to make any drastic changes in the constitution or procedure of the existing Courts of Appeal, and that it was apparent that the majority of the delegates were satisfied with the existing system.

In consequence "His Majesty's Government do not propose to make any material changes for the establishment of an Imperial Court of Appeal."

The able and interesting article by Mr. Justice Hodges already referred to, on "An Imperial Court of Final Appeal" is to be found in the *Nineteenth Century* for October last. He points out what he considers defects in the Judicial Committee as at present constituted, the uncertainty as to the personnel of the Court so that a decision given by the Court on one occasion may, when a later appeal comes on to be heard, be reversed by a court differently constituted, owing to the fact that members who were not present on the earlier occasion may be present; these, "while not expressly overruling the previous case, may have recourse to the process known to lawyers as "distinguishing" it, which in some instances is little other than a polite way of indicating that it is overruled." There is, he says, a very strong feeling that the Judicial Committee is an inferior tribunal to the House of Lords. It is defective from its very composition; from the appointment of men who have retired from the discharge of Judicial duties in the East Indies, whose qualifications and mental vigour "do not seem to be exactly those that specially qualify a man to determine a Canadian or Australian or South African appeal;" from the fact that it is the first duty of the Lords of Appeal in ordinary to attend to the hearing and determination of appeals in the House of Lords, while the Judicial Committee is only entitled to their services after the discharge of their obligations to the House of Lords.

There is further no recognition of the self-governing colonies such as is given to retired East Indians, for while, as stated above,

some colonial Judges have been appointed to the Privy Council, they are actively engaged in the discharge of their official duties in the colonial courts, and can seldom attend meetings of the Judicial Committee.

The above are the principal reasons for the charge of inferiority. In the learned Judge's opinion there is "only one sound and satisfactory solution of the difficulty, and that is that there should be only one court of *final* appeal for the whole of His Majesty's subjects," whether that be the House of Lords, or the Privy Council, or a new creation.

This Court should show by its composition that it is not merely an English, or Scotch, or Irish, or Indian, or colonial court, but that it is an Imperial one, and that the area of selection of its Judges should be as wide as the jurisdiction of the court.

The writer of the present article ventures, with much diffidence, to express an opinion in regard to this important question. He agrees with Sir James Pendergast in the opinion that there is no advantage to be gained by making additions to the Judicial Committee from those colonies where the English common law prevails, for the purpose merely of colonial representation. Some of the suggestions of Mr. Justice Hodges seem to the writer to be valuable. There should only be one final Court of Appeal for the Empire; that court should be made as strong as possible by the appointment to it of the best legal talent in the Empire, whether British or colonial. The Judges appointed should have as their sole duty to attend the sittings of this great appellate court, and should always be present there, just as all the Judges of that august tribunal, the Supreme Court of the United States, are always present at its sessions. This gives certainty and solemnity to its decisions, and obviates the danger pointed out by Mr. Justice Hodges of variableness in decisions owing to a kaleidoscopic constitution of the court.

While not believing that there is any feeling, in Canada at any rate, that the Judicial Committee is inferior to the House of Lords as an appellate tribunal, it is certainly due to colonial appellate courts, composed now for the most part of very able jurists, that the court which is to sit in appeal from their decisions should be one recognized, respected, and followed by the courts of Great Britain, and not one to which among English courts there is "none so poor to do it reverence," as has been already shown.

Moreover, the colonial courts have been told by the Judicial Committee that where a colonial legislature has passed an act in the same terms as an Imperial statute, and the latter has been authoritatively construed by a Court of Appeal in England, such construction should

be adopted by the courts of the colony. (*Trimble v. Hill*, 1879, 5 A. C. 342.) This may sometimes prove embarrassing, inasmuch as the Court of Appeal in England pays no respect to a decision of the Judicial Committee by which colonial courts are bound.

The procedure in appeals to the Final Court of Appeal whatever it be, should be simplified and the costs in colonial appeals very much reduced; at present they are prohibitive except to corporations or very wealthy litigants; the decisions should be rendered more speedily than they often are at present. With a simplified procedure and a moderate tariff of costs, it might be possible to abolish the Supreme Court of Canada and to make an appeal lie from the final Court of Appeal in each province to the final Court for the Empire, in cases of sufficient importance by reason of the amount at stake or where from the difficulty and gravity of the legal questions involved, special leave may be granted by the Provincial Court of Appeal, or in inter-Provincial disputes, and only in such cases.

It cannot be said that the decisions of the Supreme Court of Canada under its present limitations as to membership are regarded, at any rate by the Ontario Bar, as more weighty than those of the Ontario Court of Appeal. ,

Even if the proposal to have one final Court of Appeal be rejected for the present, some of the above suggestions should be carried into effect without delay. The venerable but fictitious theory of a merely consultative body should be abolished; the Court loses in efficiency and dignity from not having the outward semblance of a court of law. A building, stately and befitting the importance of its judicial work, should be at once assigned to it, or, preferably, erected specially for it, and the sessions of the court itself should be conducted with more of the usual impressive and dignified accessories of a Court of Justice.

These things may be matter of sentiment, but the Imperialistic sentiment is a factor worth regarding and conserving. If it be true, as has been said, that "in the administration of justice and in the existence of a great but scantily recognized central tribunal, we have one of the most real bonds that can hold together the distant parts of the King's dominions in those relations which only a common heritage can give," and that the appeal to the King in Council is "one of the most important ties connecting the different parts of the Empire in common obedience to the courts of law," it is surely worth while to do whatever may add to the dignity and efficiency of that tribunal. It is certain that a stately home for it, and a dignified ceremonial in connection with its sessions will greatly conduce to this result.

N. W. HOYLES.

THE PRESENT CONDITION OF MARS.

THERE is nothing in the world more elusive than truth. The great workers and thinkers since human life began, the theologians and philosophers and scientists of the race, have presumably always been in search of truth, and have expended the larger part of their energy in seeking to attain it.

Every past age has lived under the impression that it was in peculiar possession of the great bulk of intelligible and obtainable truth. And every succeeding age has smiled at the absurdities and the credulity of its predecessor.

That the ratio of truth to error, in men's theories and speculations, is an increasing one, will scarcely be denied. But if these theories and speculations could be marshalled in order and each labelled with black or white according as it is error or truth, it is probable that the appearance would be a very motley one even at the present day, and that it would be difficult to predict whether the black or the white would be in excess.

And in spite of the universal search after truth, it is not always acceptable; in fact, in some cases it appears to be even objectionable.

Men, in general, are quite satisfied to pursue the paths so well beaten by their forefathers, a characteristic not by any means confined to Eastern people.

It requires the exercise of thought and effort to examine and comprehend new facts, and many people are averse to having new ideas break in upon their accustomed ease and comfort. They do not wish to be led along some new and rougher way, not so well worn as the old. The ancient paths, they say, are good enough for them.

And then again, new truths are frequently looked at askance as possibly endangering ancient and cherished belief. For after all, faith is a greater element in the constitution of the average mind than love of truth is. Young men are frequently told to settle the articles of their faith and belief while they are young, and once for all. They might as well be advised to have their measures taken at the tailor's once for all. If they are physically dead these measures will fit them for all time. And any one who can settle his articles of belief when young, and never change or reconsider them afterwards is intellectually dead.

We are not in this world to retrograde or stand still, for both of these are equivalent to intellectual stagnation. Onwards and forwards must be the watchword of every living man. And this means

that he must constantly keep his mind open to the reception of new truth, no matter what may be the source, or what relation it may hold to ancient beliefs and preconceived ideas.

Not, of course, that he must accept every new notion that comes along; but rather that he should be open minded, willing to give to all a fair and unbiased hearing.

Such a state of mind, however, is by no means universal, and scientists in this respect are sometimes little, if any, better than others.

In illustration of the foregoing we shall consider in some detail the present astronomical want of agreement in regard to the state of the planet Mars.

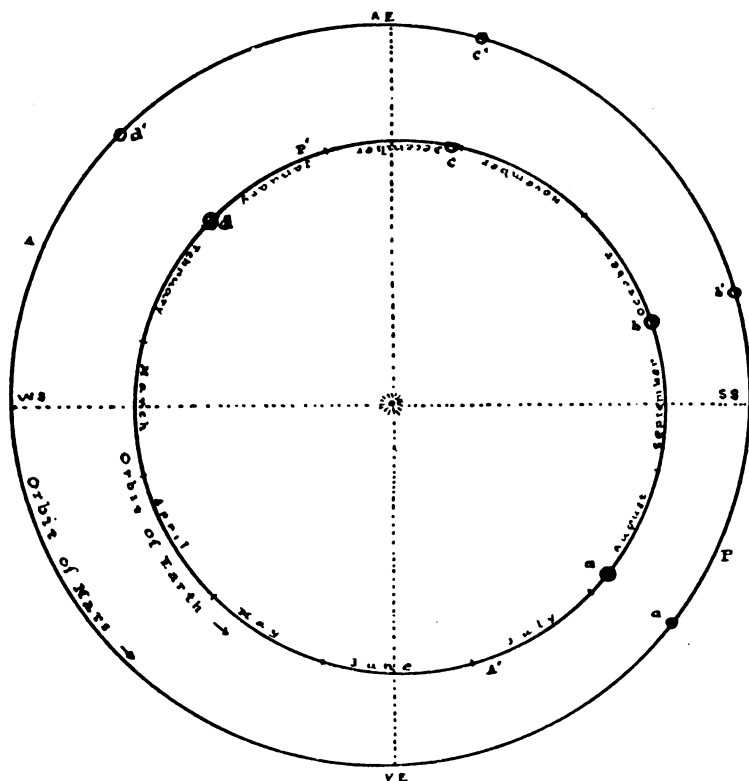
It is in fact more than merely a want of agreement; it is a direct opposition of views. For some unaccountable reason, the observations in regard to certain features of the planet are contradictory of one another, and thus it comes that astronomers are divided into two hostile camps. That either side shows that spirit of tolerance which one would expect is perhaps doubtful; but that one side does not show it is quite certain from its attitude.

It is chiefly the existence of the so-called "canals" of Mars, and all that their reality may mean, that is called into question by some of the leading astronomers. The state of the matter, when stripped of externalities is rather a peculiar one. A says, "I have seen, and do see whenever I look for them, certain phenomena on Mars, which I find it is necessary to interpret in such and such a manner." B says, "Your interpretation is not necessarily or even probably a just one, because I have looked for the phenomena which you have described, and have failed to find them, and therefore you have never seen them, and the probability is that they do not exist." The question seems to resolve itself into the three—is A the victim of his own imagination, or is he a fraud, or is B justified in saying that because he has not been able to see a thing it therefore does not exist? We will return to these hereafter. Meanwhile let us learn something about Mars.

Going outward, Mars is the next planet outside the earth, except for a little thing called Eros, which from our point of view is of no account. His mean distance from the sun is one hundred and forty one millions of miles, while that of the earth is ninety-two and one-third millions. But owing to the eccentricity of the orbits of both the earth and Mars, and the fact that the point in the heavens at which the earth is farthest from the sun is quite near to the point at which Mars is nearest the sun; the least distance between the earth and Mars is about thirty-five millions of miles. The diameter of Mars is about forty-two hundred miles, and hence by an easy calculation we

find that the angle subtended by Mars when nearest the earth to be twenty-four and three-quarters seconds of arc. With a power of two hundred and forty on the telescope, which is quite a moderate power, the disc of Mars subtends, at the best, an angle of one degree and forty seconds, or about three times the diameter of the moon as seen by the unaided eye. This is certainly large enough to show a considerable amount of detail when all the conditions of seeing are good.

In the accompanying diagram the orbits of the earth and Mars are laid down to scale. When the two planets are at the points a and



a^1 respectively, the distance between them is the least, and is about thirty-five million miles. Mars is, in this position, said to be in opposition, because it is on the side of the earth opposite that of the sun, and crosses our meridian at midnight. In the positions a , a^1 Mars appears a particularly bright star, almost rivalling Venus at her best. The next position would occur at b , b^1 somewhat more than two years after the one at a , a^1 ; a third one, more than two years after at the positions c , c^1 , &c. And thus the oppositions of Mars, the only rela-

tive positions of the earth and Mars at which reliable observations can be made, are upwards of two years apart. And even these oppositions are not all equally favorable; for while the distance a , a^1 is only thirty-five millions of miles, the distance c , c^1 is about sixty millions. Between one opposition and the next is a period of over two years, and it requires a cycle of over twelve or thirteen years for the oppositions to run through all their variations. So that in reality, the very favorable occasions for examining Mars telescopically are not frequent, being only a few months out of twelve or thirteen years. Were these occasions of yearly occurrence the matters in dispute would not have to wait long for settlement.

The first thing to consider is as to whether the surface conditions of Mars are such as are necessary to the existence of living beings.

We know that this earth is enveloped in an ocean of gases, chiefly oxygen and nitrogen, carbon dioxide and water vapors, which are called atmosphere; and when the planet Venus enters on the sun's disc at the beginning of a transit she exhibits to us the presence of a well defined enveloping atmosphere. But Mars never comes between us and the sun, and there is no large bright body in the universe upon which he may be projected. Moreover, there are no reliable means of observation, other than those that can be gained by the telescope under even doubtful interpretations, to determine whether Mars has an atmosphere or not. Under such circumstances we must depend largely upon analogy. The spectroscope shows us that this earth and the sun contain practically the same chemical elements, and we are perfectly justified in inferring that the same statement applies to any of the planets as well as this earth. For astronomers are pretty well agreed as to the origin of the Solar system, and the nature of that origin requires that a community of chemical material, with possibly some local variations, should run throughout the whole system, from the sun to the distant Neptune. And in the great cosmic revolutions by which the planets became separated from the glowing nebular and central mass, there could have been no selective influence exerted which would give to one planet certain materials and withhold them from another. But of the four consecutive planets, Venus, Earth, Mars and Jupiter, no one denies the existence of atmosphere on Venus, Earth and Jupiter. Then why should we deny it to Mars? Also the materials forming the atmospheres, or the materials from which they may have been subsequently formed, must have been common to all. But then we have the argument that the conditions, with respect to the planets named, are not the same. Earth and Venus both have nearly twice the diameter of Mars, while Jupiter is the largest planet of the system. And although Mars might have had an

atmosphere at one time, the gases forming it have escaped away into space, on account of his low attractive influence; just in the same manner as they have escaped from the moon, which bears evidence in its crater covered surface of once having also had some kind of an atmosphere. Now, it is an easy matter to determine the velocity with which a body would arrive at the surface of any well-known planet, if the body were to fall from the distance of a fixed star under the influence of the planet's attraction alone. And if a bullet were projected vertically upwards from the surface of any planet with the velocity determined for the planet, and supposing that no atmosphere were present to retard it, the bullet would go off into space and never return to the planet.

The following tables gives the velocities for a few of the planets :

Moon....	1.5 miles per second.
Venus....	6.6 miles per second, approximately.
Earth....	6.9 miles per second.
Mars	3.1 miles per second.
Jupiter....	37.0 miles per second, approximately.

Again, according to modern theory a gas consists of minute parts or molecules which are relatively very far apart, and which are moving in all directions with very great velocity, the velocity varying, however, for different gases. Owing to collisions a relatively small number of molecules attain, at times, to a maximum or limiting velocity, but the number having the highest velocity at any one time is only a very small fraction of the whole.

These maximum velocities, according to Maxwell, Risteen and others, are about as follows for a few of the commoner gases :

Hydrogen....	7.4 miles per second.
Water Vapor....	2.5 miles per second.
Nitrogen....	2.0 miles per second.
Oxygen.....	1.8 miles per second.
Carbon dioxide....	1.6 miles per second.

If this maximum velocity, in any case, reaches the velocity given in the table of planets, that particular gas might, and probably would, slowly leave the planet and pass away into space.

By comparison of the tables we see that hydrogen would thus escape from every planet of the list except Jupiter, and it is very significant that while a very large part of the visible atmosphere of the sun is hydrogen, not a trace of the gas is found in the atmosphere of the earth.

Similarly we infer that all the gases in the list would readily escape from the moon; and the fact has long been known that under

the most crucial tests the moon shows no trace of the presence of an atmosphere.

A further examination of the tables tells us that with the exception of hydrogen, none of the gases mentioned could escape from any of the planets except the moon. Mars, however, is not far above the limit for water vapor, and if we are inclined to think that, after all, our calculation for water vapor may be a little too low and that this substance might escape from the surface of Mars very slowly, we must remember that there is even a greater probability that the velocity given may be too high, and that in any case the loss of water would be so infinitesimal as to be safely left out of account.

The strong probability is, then, that Mars has an atmosphere much similar in composition to our own. It is true that Mars, being a smaller planet than the earth, and having a lower constant of gravitation, would be surrounded by an atmosphere considerably less dense than ours, and possibly extending to as great if not to a greater height. For as the lowest stratum of the atmosphere is pressed upon and condensed by the weight of all the superincumbent mass, the extent of the atmosphere and the density of its surface portions must depend largely upon the force of the planet's attraction.

We may describe, then, the probable surface conditions of Mars somewhat as follows:

Here is a planet a little over 4,200 miles in diameter, with a surface attraction, or a force of gravity equal to thirty-nine one-hundredths of that of the earth. So that a man transferred from the earth to Mars, if such a thing were possible, would find his strength increased in the ratio of 100 to 39. Supposing then, that it is possible for beings like men to live upon Mars, it follows as a matter of course, that it would be far easier, on account of the lightness of the material to be handled, to rear huge structures or to dig great canals on Mars than on Earth. These statements are not a matter of theory in any sense, but a matter of fact depending upon the eternal physical principles which prevail throughout the universe.

The surface of Mars must be comparatively level, as no distinctive mountains or mountain chains have been discovered upon it, but it is doubtful if the conditions under which observations can be made are such as to enable anything like moderate sized mountains to be detected.

It is probable, as has been shown, that there may be a considerable amount of water upon Mars, but it is certain that its quantity is not at all commensurable with that upon earth, and that it is not collected into large bodies forming anything like our seas and oceans. If the amount of water now present upon the Martian surface is less

than it formerly was, as some appearances seem to indicate, it is not because the water has passed away into space but probably rather because it has penetrated more extensively into the body of the planet, owing to the gradual loss of its internal heat. The earth is still too hot in its interior to allow water to sink down to any great distance, but after the passing of long ages it may become so cooled as to allow a great part of its present seas to penetrate deep into its solid crust and be forever lost. And Mars being, according to the Nebular theory, an older planet than earth as well as a smaller one, its internal heat must have largely disappeared as compared with that of the earth.

That Mars is encompassed by an atmosphere of permanent gases, nitrogen, oxygen and carbon dioxide, like the earth is, it must be admitted, somewhat conjectural, and it is difficult to see how any observations except the very ones under dispute can satisfactorily remove the uncertainty. Probability, however, is in its favour, although as a matter of course, the atmosphere must be considerably less dense than ours. Let us suppose then, that it has only half the surface density of our atmosphere, and let us examine the consequences. We can be perfectly certain that no gases can exist in quantity in the Martian atmosphere which do not exist in quantity in ours, since the chemical constitution must be common to all the planets. Hence the Martian atmosphere cannot be poisonous or harmful in itself to even terrestrial beings. But it is almost certain that the density would be insufficient for the support of terrestrial animal life, unless the proportion of oxygen is considerably greater than in terrestrial air. We shall not, however, employ any such an assumption.

When we pass upwards to the distance of about seven miles, we leave one-half of our whole atmosphere below us and thus get into a stratum of the density which we have assumed for that of the Martian atmosphere at the planet's surface. No mountain will take us so high as this, but in a somewhat celebrated balloon ascent Mr. Glaisher and his aeronaut reached an elevation which their registering barometer showed to be about seven miles, and at which Mr. Glaisher became for a time unconscious, although the more experienced aeronaut managed to retain his senses and his strength sufficiently to open the valve for the lowering of the balloon. Since that experience it is customary to take along bags of oxygen in making very high ascents, for the distress accompanying such elevated positions is plainly due to a sort of asphyxiation brought on by an insufficient oxidation of the blood. People unaccustomed to mountain climbing are quite easily affected by rising to any great elevation, while those, like the Swiss mountaineers, who are born and reared on the high mountain slopes

of that country, experience no difficulty whatever. Nature is prolific in her resources, and if a given pair of lungs are inadequate she has furnished to the animal itself the means of acquiring a larger pair. We are adapted to the density of air which surrounds us, but beings could just as easily be adapted to any reasonable density of atmosphere, and no particular degree of density can be laid down as being absolutely essential to the existence of life. Birds which consume large quantities of air, which oxidize their blood rapidly and have a high temperature will live at ease at great atmospheric heights. On the other hand fishes, being dependent upon the small quantity of oxygen which the water dissolves out of the air, oxidize their blood but sparingly, and have a low temperature, and would perish under a much greater supply of oxygen. And vegetation, which climbs the slopes of the loftiest mountains, is stopped in its upward progress, not by the insufficiency of the atmosphere, but by the extreme cold which is always present at great heights.

The majority of people, who are not accomplished physicists, have an idea that when a dish of water evaporates it is in some way absorbed or sucked up by the air, and that without air no evaporation would take place. Such an idea is radically wrong. In the exhausted receiver of an air pump water will evaporate so rapidly as to freeze itself through giving up its sensible heat to become latent, and the only thing that will prevent the evaporation of an open body of water is the superincumbent pressure of an atmosphere of water vapor. If the earth had no atmosphere or fixed gases, it would be surrounded by an atmosphere of water vapor, and the only effect of the present fixed atmosphere is to retard the upwards motion of the water molecules which have to find their way between the molecules of the air, and thus to interfere with the prompt and complete formation of the water vapor atmosphere.

When a portion of space on the earth's surface has its water-vapor atmosphere fully developed it is said to be saturated. In this space no further evaporation could take place without some change in conditions; or rather the amount of precipitation would just balance the amount of evaporation, and an apparent state of rest would be the result. This state of things is seldom found upon the earth except in the case of a drizzling rain of some duration or a dense fog. And the influences which tend to prevent such a state are the weight and continuous motion of the atmosphere and the great stretches of inland, arid, and waterless plains.

The things which determine the extent of the water-vapor atmosphere surrounding a planet furnished with water on its surface are first, the force of gravitation at the planet, and second, the tempera-

ture. As the force of gravity at the surface of Mars is less than that on the earth in the ratio of 39 to 100, the extent of the Martian vapor atmosphere, other things being equal, must be much greater than upon earth. Also, as the Martian permanent atmosphere is thinner and lighter than the earthly one, evaporation must take place more rapidly on the former planet than on the latter one; and it is quite possible that the water-vapor atmosphere of Mars may be in a fully, or nearly, saturated condition during a large portion of the time.

In taking up the effects of temperature we will do well to first consider the effects of such an atmosphere upon temperature.

In the interior of continents, on wide and arid plains such as the Egyptian deserts, or the steppes of Russia, or the llanos of South America, travellers tell the one story of how the heat of the sun is almost unbearable by day, and how the chill of the night is even sometimes so great as to form thin ice on surfaces of water exposed to free radiation. Piazzi Smyth also, in his residence for sometime on the peak of Teneriffe, describes the direct rays of the sun as being decidedly uncomfortable on account of their tendency to blister the skin, while the shade was also uncomfortable on account of its low temperature. In his situation the air never got warm, and the transition from sunshine to shade was also one from the heat of a great fire to the chilling effects of an iceberg.

Now, these effects are due to the dryness of the atmosphere, to the want of water vapor. On elevated slopes of high mountains this must always be the state of affairs, since there is a limit to the height of the vapor atmosphere of the earth. But on the plains the dryness is due to the fact that there is no near body of water to supply moisture, and the winds which blow over the region have been thoroughly dried in their long journey from distant and possibly mountainous districts.

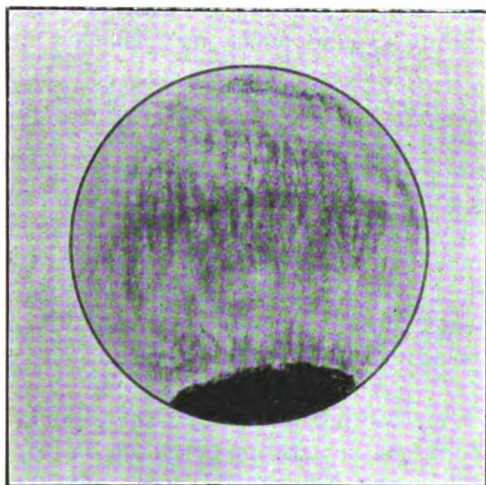
On the other hand, in localities where water is abundant and where the point of saturation is nearly reached, there is very little difference between sunshine and shade, and the whole air appears to get warm. Such is the case in nearly all small islands of the sea. The fixed gases of the atmosphere absorb little or none of the sun's rays and are consequently unaffected by their passage; but the vapor of water entraps the heat rays especially, and under their influence grows warm itself, thus warming the whole atmosphere of which it forms a part. Also, the light rays of the sun which find their way down to the earth are there absorbed to heat the ground, and the modified heat which radiates from the ground finds great difficulty in getting through the covering of water-vapor, on its way outwards. Thus the vapor atmosphere acts like a great blanket over the earth

which allows the sun's heat to pass readily inwards but offers a considerable resistance to its passing outward again. The glass roof in a hot-house serves very much the same purpose. And I think it is safe to say that without water-vapor in the atmosphere, large portions of the now inhabited world would be quite uninhabitable. Now apply these considerations to Mars; for the general laws of physics must hold there as well as elsewhere. With a light atmosphere, and water widely distributed, there would be an extensive and almost saturated vapor-blanket surrounding the planet, and this might make the climate of Mars fully as congenial, or even more so, than the climate of earth. On account of the lightness of the atmosphere there would be no cloud, such as we have floating in the upper air, for as soon as any vapor became condensed it would slowly find its way downward to the surface of the planet to be evaporated again. As the limpid sunshine of the day gave way to the shades of evening, the upper regions of vapor would be chilled and begin to condense, the condensation itself giving out sufficient heat to prevent any very great reduction of temperature during the night, which is only a very little longer than our night. This condensation would, as in our own case, form a copious dew which would wet and revivify the surface of the planet.

Again, Mars rotates on its axis in 24 hours and 37 minutes, thus having a day only 37 minutes longer than the day on earth. And his axis is inclined to the plane of his orbit at an angle of about 29 degrees, while the axis of earth has an inclination of about $23\frac{1}{2}$ degrees, so that his seasonal changes cannot differ in any very marked degree from those of earth. Thus he has his spring with equal days and nights, his summer in the northern hemisphere and winter in the southern one, when his north pole leans towards the sun; and his winter in the northern hemisphere and summer in the southern when his south pole is inclined towards the sun.

Taking all these things into consideration, and reasoning only from analogy and the physical laws of the universe, we are forced to conclude that the probability is in favor of the view that the surface conditions of Mars are such as to be capable of sustaining life. And if this is true, we can rest assured that there is life upon the planet. For we know of no place or condition upon this earth where life is possible, and it is not found. And with Harriet Martineau we believe that it may be laid down as a general principle, that life exists wherever conditions admit of it. What kind of life exists on Mars is, however, another question. Let us consider next the results of observations made upon Mars and see what they tell us in as far as we can interpret them.

Suppose that Mars comes into opposition under the most favorable conditions for observation, that is in July or August. His south pole is then emerging from its long winter of over 340 days, and coming into the light and heat of the solar rays. The pole is seen to be surrounded by a relatively large white patch, much brighter than the general body of the planet. As it creeps farther into the sunlight by the motion of the planet in its orbit, this white patch is seen to grow gradually smaller, and after some time fissures appear to form in it, and it slowly vanishes or nearly vanishes, for it is not often that it disappears entirely. Similar changes are seen to take place about the north pole, but these cannot be so carefully observed, because the conditions are less favorable as the least distance of Mars from the earth is then over, sixty million miles.



And what are these white polar spots? If we were situated on Venus and could see either pole of the earth emerging from its six months winter at the equinox we would observe a great white tract surrounding the pole just as we do in the case of Mars. Now, we know full well what the whiteness about the earth's pole is due to after its long wintry night and exclusion from the sun's heat, and it seems the most natural thing in the world to refer the polar whiteness of Mars to the same source, that is, snow.

But there are some astronomers who, whether through over-caution in the adoption of anything novel, or through some hidden spring of action with which we are not acquainted, will resort to any explanation whatever rather than the most natural one, from some kind of a preconceived idea that Mars cannot be, and must not be held to be, a living world.

Thus, one man thinks that the polar whiteness of Mars may be due to a little hoar-frost. Well, hoar-frost is only another name for snow; and it is exceedingly likely that the whole accumulation is of the form and nature of hoar-frost rather than that of snow. But hoar-frost requires water for its formation. And the length of time that it takes for the continuous beating of the solar rays upon this hoar-frost to melt it down, and the fact that the whole of the Martian summer of 320 days is usually insufficient to dispose of the whole of it, shows conclusively that the amount cannot be described by the word *little*. The deposit may be hoar-frost; but if so it must be both extensive and deep, and must require a large amount of water for its formation, and give a large amount of water in its liquefaction.

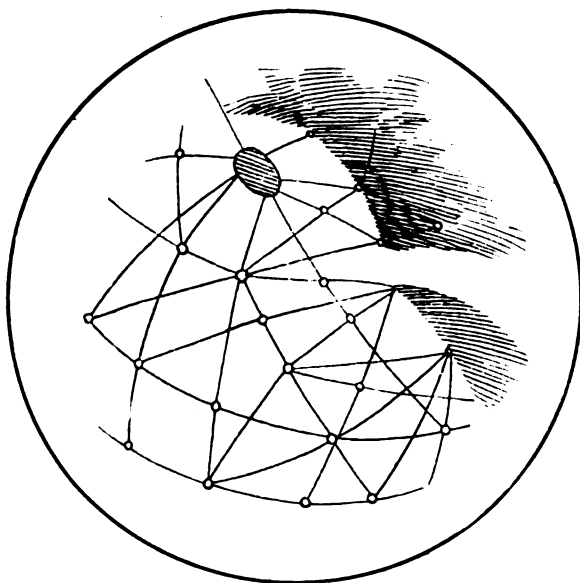
Another supposes that the Martian polar caps may be frozen carbon dioxide, for that gas at a very low temperature, somewhere about 150F., congeals to a solid which may take on the appearance of hoar-frost.

There are several grave objections to such a supposition. First, we have no reason for believing that the surface of Mars attains such a low temperature. Explorers in our northern Polar regions have passed whole winters in situations where the sun has been absent for three consecutive months, and where the earth was covered by a coating almost impenetrable to heat, some hundreds of feet of snow and ice, and yet the lowest thermometric record is from 75 to 80F., a temperature at which even alcohol did not freeze. And it is difficult to see why the polar regions of Mars should be so very much colder than those of earth.

Secondly, the first few weeks of sunshine would serve to dissolve and dissipate into gas any coating of carbon dioxide which would be formed; and it is quite unreasonable to suppose that it would withstand the constant bombarding of the solar rays for a whole Martian summer. And in the third place, this assumption requires that the relative amount of carbon dioxide on Mars is far and away in excess of that upon earth, an assumption which is contrary to all analogy. Of course, it is not possible to absolutely disprove any of these assumptions, any more than it is to disprove the assumption that the farther side of the moon is very different from the visible side, because we have not the means of doing so. But taking into consideration the general theory of the origin of the solar universe, and reasoning from analogies which must in this case take the place of absolute knowledge, it seems to the writer that the only consistent explanation is the one which has been longest held, and which is most natural, most simple, and most consistent with our other knowledge, namely that there is water on the surface of Mars, and that the white

patches which appear and disappear at stated times and seasons, are polar snowcaps.

And now we come to the point mainly in dispute, the existence or non-existence of the so-called canals of Mars. It is not our intention at present to give any detailed description of these, or to discuss the theory or theories which have been advanced to account for them. It will suffice to say that they are not held to be canals, that they, in appearance, are very fine lines which traverse the surface of Mars in all directions, running in the shortest line from point to point, i. e. along great circles of the planet. We will not attempt to discuss the nature of these, because according to some astronomers they do not exist. A crude representation of a part of the surface of Mars, with the supposed canals, is given in the drawing.



Schiaparelli claimed to have seen lines on Mars in 1877, he being the pioneer in this department of observation. Nobody believed his report, but undiscouraged he worked quietly on, and continually added to his former reports. All this time nobody else had seen the lines and nobody believed in them.

In 1886 they were seen by Perrotin of Nice, and a little afterwards by Thollon. Since that they have been seen and studied by Lowell, Douglass, Pickering, Wilson, Williams, and some others.

And now comes the peculiarity. Many other astronomers, even those armed with the largest telescopes in the world, say that they have searched for the so-called canals and have failed to see them, and that, therefore, in their opinion, they do not exist.

One says that small points on the surface, under high powers, would, by some optical process, be drawn out into lines. This is doubtful. The writer has examined the fine markings on such microscopic test objects as *pleurosigma formosum*, *hippocampus*, &c., and with high powers and well directed light, the lines broke up very distinctly in rows of semispherical protuberances; a complete reversal of the foregoing statement. Moreover, that we fail to see a certain thing is no proof of its non-existence. Some people fail altogether to unite the two pictures of a stereograph, but this does not prove that they cannot be united. Very much depends upon the eye as well as upon the telescope, and it does not follow that because an astronomer is in possession of a very large telescope that therefore his eye is supersensitive, or that the telescope excels in definition, and we presume that both these are elements in very delicate observations.

Sir William Herschell possessed eyes of such remarkable power that many of his discoveries were doubted for years after his death, but in the end proved to be correct, and Dawes of England saw and described many things which were invisible to other observers with larger telescopes.

Moreover, if the canals are optical illusions, or any other kind of illusions, it is difficult to explain or understand how so many observers, in different parts of the world, can be all subject to the same illusions, and such peculiar illusions, and in the same way. For these observers are all fairly agreed as to the general appearance of the canals, as to their geodetic directions, their concurrences, and as to the seasonal changes which they undergo. And to say that these men have entered into collusion to deceive, or that they are dishonest or careless about getting at the facts, is altogether out of the question.

Those who see the canals feel sure of their position. Those who have not seen them will find it very difficult to prove a negative.

And here we must leave the matter for the reader to draw his own conclusion, for this article is already longer than it was intended to be.

N. F. DUPUIS.

THE MEANING OF CHRISTIANITY.*

IT has come to be generally believed that Christian Apologetic is in a bad way. To say that an argument emanates from an "apologist," or that a book is "apologetic," is equivalent to saying that the argument or book bears the taint of disingenuousness. The feeling is widespread that the apologist is not so much concerned to find out the bitter truth as to buttress assumptions to which, for whatever reason, he has committed himself. But there is another and more convincing reason for the discredit which has overtaken formal defences of religion. The apologist does not know his business. He is living in a changed world, and is sorely perplexed now to relate himself to his new environment. Criticism, higher and lower, has unsettled the traditional axioms; science does not now take the trouble to consider the theological argument but regards it as a wearisome and quite irrelevant intruder into a self-contained and self-sufficient order; philosophy has much difficulty in finding room for ideas and conceptions that seem bound up with the very being of the Christian consciousness. The majority of religious men are sorely tempted either to hand themselves over to some irrational dogmatism, Papal or Protestant, or to take refuge in blind feeling of which no rational estimate can be furnished. Now when we look to the apologist for guidance, we are dismayed to find him hesitating, perplexed, troubled. Ask him: What is Christianity? and he gives you no clear and coherent answer. He does not know how far, if at all, miracles belong to the essence of the faith; he cannot tell us whether we are still to believe in the virgin-birth and the resurrection; he does not make clear to us the exclusive claims of Christianity. In a word, he is not sure as to what positions are essential, and what are secondary. There are two distinguished theologians of our time to whom these remarks are not applicable, and whose books, though very different, and even opposed, will do much to restore apologetics to the useful functions it serves in the Christian commonwealth. The one is Professor Harnack in his "Essence of Christianity," the other is Principal Fairbairn in his "Philosophy of the Christian Religion." It is interesting to note the method or underlying idea of their respective attitudes towards the problem of the hour. That problem may be described as a demand for unity in the inner world of experience. However men in other periods of history may have

*"The Philosophy of the Christian Religion." By A. M. Fairbairn, D.D., LL.D., Principal of Mansfield College, Oxford. London: Hodges & Houghton, 1902. Pps. 568.

lived without any consciousness of the divorce between life and philosophy, feeling and understanding, faith and reason, such a happy innocence is not possible to the modern mind. Unity of life is broken up. We are like spirits

"Wandering between the worlds, one dead,
The other formless to be born."

The fundamental question is: How is this disharmony to be healed and the jarred music of the human spirit regain its clear and jubilant note? Dr. Harnack gives up the problem in despair on the ground that history declares every attempt at a solution to be inadequate and unsatisfactory. As rational beings our effort is like that of Sisyphus; it is without a hope and a goal. Dr. Harnack would echo the words of Carlyle: "We are borne this way and that by the deep-swelling tides and grand ocean-currents, of which what faintest chance is there that we should ever exhaust the significance, ascertain the goings and the comings? A region of doubt, therefore, hovers forever in the background." Carlyle rescued himself from the bottomless pit of scepticism opened by his pessimistic view of man's rational nature, through a transcendental offered Deity. "Most true is it, as a wise man teaches us, doubt of any sort cannot be removed except by action." Similarly, Dr. Harnack as a theological pessimist finds a remedy for his despair of theology in a kind of Neo-platonic flight to the higher mystic region when all contradictions vanish amid the heavenly fervours of feeling. "Believe in the good," he seems to say, "even though you know nothing and can know nothing about it. Thus will you realise inner unity, which else is impossible." This indeed is heroism, but it is the heroism bred of intellectual despair. It may serve an individual here or there, but it is not natural to man as man, penetrated as he is with the ineradicable conviction that the God who made him will not put him to permanent intellectual confusion, that the Infinite Reality presses around his entire spiritual life and reveals itself therein.

When we turn to the English theologian we find ourselves in a different atmosphere. Dr. Fairbairn appeals to reason, not to the mere logic-chopping faculty which sometimes appropriates that name, but to the rich complex of our spiritual endowment. In opposition to our artificial dualisms he maintains that God operates throughout the entire life of humanity. That there is no outlying region where traces of His presence may not be found. That His light deserts not the intellect as it sounds on its "dim and perilous way" through the mysteries of the universe, even as His love

kindles the dear affections and wings the solemn aspirations of the heart. He takes his stand on the principle that the universe is intelligible, that the reason incarnate in nature and the reason embodied in man can meet and blossom into knowledge. He believes, too, that the ideals and personalities creative of progress in history, the forces that are gradually lifting man to higher levels of being and well-being emerge from the eternal ground of phenomena, the personal God of religion. And further, he holds that the most creative personality, the supreme factor of order in history, is Jesus of Nazareth, and that the religion which he founded is the only one that can claim to realize all that the ethnic faiths foreshadow, to be the only universal religion, fitted for man as man. In working out his great argument Dr. Fairbairn raises all or nearly all the vital problems of the hour in the sphere of religion. Of course it would be too much to say that he has uttered the last word on any of the questions he has raised. It is not given to any one man or age to construct a theory which shall be the final embodiment of reason; neither is such a doctrine the outcome of an historic process which is co-extensive with the life of humanity. But a man best serves his time, as F. D. Maurice used to say, by writing about the questions in which his time is interested; and if he succeeds in clarifying the thoughts of his contemporaries in these matters, or of bringing vital problems any, even the smallest, degree toward a solution, he has done a service to his generation which it would be difficult to exaggerate. Such a service, we believe, Dr. Fairbairn is doing at present.

Of the noble qualifications which Dr. Fairbairn brings to his task it is needless to speak. Those who are familiar with his instructive and stimulating discussions in the *Philosophy of Religion* or in *The Life of Christ*, or those who, like the present writer, have enjoyed the privilege of his personal teaching, will know what to expect. A style characterised by a platonic fulness of language rising once and again into passages of masculine and lofty rhetoric, a grasp, as of a master, of his materials, scientific, historical and philosophical, a weight of learning sufficient to make the reputation of half a dozen theologians, a power of trenchant criticism, which pierces pretentious sophistries, and smites with merciless rigour "figures of wood painted to look like iron," an enthusiasm which loves to face the hardest problems and is resolute to wring from the most recalcitrant subject its inmost secrets, a martial ardour which fears no foe and scales the most giddy heights, and finally, the speech of a genuine prophet who is never far from the well-

heads of human emotion, and is ever conscious of the pain and mystery that encompass our existence here. Such are the things we grow familiar with in our study of this book. Some, perhaps, will feel repelled by a belligerent note that is now and again sounded. But there is one virtue conspicuously displayed here which we take leave to assert is more than an equivalent set-off against all Dr. Fairbairn's literary sins. He is never dull, and dulness is the curse of theological writing. Whether you agree with him or not, whether you are assured or in doubt that he has bottomed some of the great questions he discusses, at any rate you feel yourself in contact with one who can so present his subject as to fascinate, and from whom only the imperative call of duty is strong enough to tear you away. Were there more like him, we might hope that the long-standing divorce between literature and theology should in our day find promise of an end, and noble expression should lend fit embodiment to noble thoughts. As may be expected, Dr. Fairbairn has the defects of his qualities. Occasionally—but only occasionally—rhetoric appears to do duty for argument, and a telling phrase or clever epigram conceals rather than solves a difficulty. The source of some of his pronouncements which are open to criticism lies in his turn for oratory. He writes with an audience before his eye, not with an individual reader in his mind, and the flow of his sentences and forms of expression, like the late Dr. John Caird's, follow the method of spoken discourse. This literary manner makes for life, energy, movement, but the rush of imagination and thought sometimes carry us *over* an intellectual entanglement instead of giving us the clue to its mazy windings. But it is time to turn to the book itself.

The governing idea of the work is, as defined by the author, "to look at what is at once the central fact and idea of the Christian faith by a mind whose chief labour in life has been to make an attempt at a philosophy of religion through a history of religion." What is the central fact of the Christian religion? It is the Person of Christ. Here it is that "the intellect feels overwhelmed by mysteries it cannot solve," and yet here Christian experience finds the factors of its most characteristic qualities, and the Church the truth it has lived by and is bound to live for." (p. 5.) The purpose of the author, then, "to discuss the question as to the Person of Christ, what He was, and how He ought to be conceived not simply as a chapter in Biblical or systematic theology, but as a problem directly raised by the place He holds and the functions He has fulfilled in the life of man, collective and individual." (p. 17.)

The discussion falls into two great divisions, the first treating of philosophical questions which affect belief in Christ as a supernatural person, and the second showing how the interpretation of Jesus as Christ and Son of God has created the Christian religion.

Dr. Fairbairn's philosophical position may be defined as a modified idealism. Though, curiously enough, we find no allusion, direct or indirect, to the late Professor T. H. Green, it is clear that the writer's thought moves along his lines and issues in practically identical conclusions. Both labour to show that Nature and Morality imply a spiritual principle. With Green this principle is self-consciousness: with our author it is personality. The former sees in the individual a reproduction of the Divine self-consciousness; the latter, possibly to avoid a pantheistic inference, makes no use of this idea, but finds in Christ the alone adequate embodiment of the Divine. It is not Nature that interprets man: it is man that interprets Nature. "If," he says, "we eliminate personality from Nature, either objectively as interpretable; or subjectively as interpreted—we are left without a nature we can regard as intelligible.

* * * The Personality which makes Nature was not made by the Nature it makes." (p. 30.) But Personality is also the vehicle of much good. It is Personality that is the key to history, makes art, science, politics possible. More especially is this true in the sphere of religion. It is the great religious personalities of the world that achieve the most good for man. If then God is ever "by means of great persons shaping the life of man to its diviner issues, what could be more consonant alike with man's nature and God's method of forming or reforming it, than that He should send a supreme Personality as the vehicle of highest good to the race." (p. 93.)

Dr. Fairbairn's subjects evolutionist ethics to a severe criticism. He shows that the ethical ideal cannot be derived from Nature by any process of evolution, but springs from man's own nature, and so is a witness to the *supernatural* in man. He contrasts very effectively the histories of man and the man-like ape and finds that similarities in organic structure do not account for the differences in their psychical career. One could wish, however, that Dr. Fairbairn had tried to meet Darwin on his own ground, and show that his method of deriving man's mind and all its works from animal intelligence is impossible. Darwin did not try to account for the origin of mind; he accepted it as a starting-point, and thence sought to trace its evolution from the lower animals up to man. How then are we to find a qualitative difference as to mind

between man and the ape? Dr. Fairbairn throws no light on this point. Again: is it not a hazardous assertion that the production of life from non-living antecedents is inconceivable? (p. 49) Sir Oliver Lodge assures us that "there is not a biologist but believes (perhaps quite erroneously) that sooner or later the discovery will be made, and that a cell having all the essential functions of life will be constructed out of inorganic material."¹ To base a theistic argument on the supposed or apparent discontinuities of nature is a mode of procedure which does not carry conviction to the scientific mind.

The chief nature of Dr. Fairbairn's presentation of the metaphysical argument for the reality of the Divine does not lie so much in any original contribution to the matter as in the implied protest against the prevailing tendency to cut theology off from philosophy, and to base it not on man's nature as a whole, but on some one element in his nature, such as feeling. The Ritschlian Theologian is too prone to echo the sneer of Mephistopheles:

"Ich sag 'es dir : ein Kerl der speculirt
Ist wie ein Thier, auf dürrer Heide
Von einem bösen Geist im Kreis geführt
Und rings umher liegt schöne grüne Weide."

But of course every man speculates, and must speculate. What we need is not less speculation, but more—only it ought to be of the proper kind. For, after all, the common-sense arguments for Theism, as has been said, are only metaphysical arguments imperfectly thought out.

Space does not permit us to do more than refer to Dr. Fairbairn's learned and luminous discussion of the Problem of Evil, Optimism and Pessimism. The thoughtful reader will feel that that our author has not solved the standing puzzle of moral freedom, nor has he shown how primitive man who, according to the received conclusions of anthropology, was half man and half-brute, was capable of living a sinless life—and if he was incapable of doing so, of what use was his assumed freedom? Still, there is much valuable material in these chapters which will well repay careful study.

When we come to the papers which treat of the origin and meaning of religion we realise that for the first time the pure strength and comprehensiveness of Dr. Fairbairn's mind are displayed. Very searching and convincing is his refutation of Spencer's theory that primitive religion was merely a series of "mistaken inferences," or "a system of superstitions." Religion cannot be

¹Hibbert Journal, October, 1902, p. 59.

traced to hallucinations or dreams, "with their suggestions of mysterious 'doubles,' of a gorged or hungry savage," but is rooted in man's rational nature which "cannot think without thinking God." Religions may be divided into two classes: The Spontaneous and the Founded. "Spontaneous religions may be termed apotheoses of nature, or the interpretation of the spirit and the expression of its ideas in sensuous forms; but instituted religions may be described as apotheoses of personality, or the interpretation of man and the expression of his ideas in the terms of mind or spirit." (p. 259.) Christianity is an established or founded religion. Jesus Christ is the Founder. How did he found it? It was not as Jesus, the historical person, but as Christ, that is, as the historical person in the light of an ideal interpretation. Without the theological Christ, the Son of God dwelling in the bosom of the Father, "we should have had no Christian religion, but only a Jewish sect the more; with this we have a Jewish sect the less, but the largest and most missionary of religions." (p. 261.) Hence Jesus did not in the strict sense create the Christian religion; He caused it to be created. And the creative process finds its expression in the apostolic literature which possesses the conception formed of Jesus by His Society. Was this process of apotheosis then a purely imaginative thing, without any objective validity? Is Christianity but another illustration of natural tendencies such as have transformed Buddha, the simple teacher, into a very god for the Hindoo mind? Dr. Fairbairn answers: The history of Jesus as given in the Gospels justifies the Apostolic interpretation. And what sort of a history is it that we have here? It is the history of a person conceived to be supernatural yet living and acting within an historical movement. The men who write the history are no romancers: "They write soberly with the unperplexed consciousness who describe matters of fact which, though wonderful, are yet entirely credible, because in keeping with the form and attributes of Him whose acts they are said to be." We have rarely seen the argument for the substantial historicity of the Gospels so persuasively and successfully handled as in the opening chapters of Book II. Hence Dr. Fairbairn accepts the Gospel miracles as genuine historical facts. They are no emotion of the mythical faculty, for "the mythical miracle as a rule reflects a morbid temper, for it is commonly the creation of a fancy grown fantastic and even childish." Christ's miracles "do not move in the region of the weird or the uncanny, nor do they, like the feats of the witch, strike with fear, or like the tricks of the magician or wizard, smite with surprise," (p. 332). This thought

of a "sane supernaturalism" is worked out with all Dr. Fairbairn's skill and fertility of illustration. It has weight, yet one desiderates a closer analysis of what a miracle really is, and some answer to the difficulties raised by the sending of the demons into the swine of Gadara and by the cursing of the fig-tree. No distinction is drawn between miracles and miracles; all are placed on the same level without, it would seem, adequate justification.

Dr. Fairbairn expounds with freshness and spiritual insight Christ's own interpretation of His death. Here the main point is our Lord's own view as to the meaning of the Last Supper. The words He used at its institution were the "mightiest and most precise" as to His death. They imply that His death (1) ends one covenant and establishes another; (2) is inflicted by man, yet endured for man; (3) has as its purpose to create an emancipated people of God (p. 421.) The conclusion is expressed thus: Jesus died on the cross, but not of the cross. He suffered crucifixion, but He was not crucified. The will which triumphed in the conflict broke the heart which could not bear to endure death at the hands of sinners. Now the source of the apostolic interpretation of Christ's death is to be found in Christ Himself. The epistle to the Hebrews interprets Christ's thought through the Levitical categories of priest and sacrifice; St. Paul conceives it through the Rabbinical law. There is much said on both these points with which the reader cannot but sympathize. Yet the question rises: How far is the Pauline doctrine binding on the Church to-day? How is it to be brought into sympathetic contact with the modern mind? Here is also the serious lack in Dr. Denney's able book on "The Death of Christ," inasmuch as it fails to relate the apostolic theory to modern philosophy. It is not enough to tell us what St. Paul meant; we must know how his meaning can enter into the organism of our thought to-day, and how far, if at all, it needs supplementing in the light of later reflection.

To sum up: Our conviction is that this book is the most valuable contribution to English theology our generation has seen. It offers a much-needed counterpoise to a great deal that goes under the guise of theological writing which is, however, not so much theological as antiquarian. Dr. Fairburn's mind delights in the larger and more comprehensive aspects of his great theme, and brushing aside, sometimes with ill-concealed impatience, mere plausibilities and spurious irrelevancies, discloses the impressive outlines and noble proportions of theological science. He who reads this book "goes to prove his soul." Either he will be

repelled and fall back hopelessly on some external authority, or he will go forward, dropping much that was uncertain and superstitious, conscious of a wider sky overhead, and grander horizons beyond.

SAMUEL McCOMB.



FIELD OF MARATHON.

BROWNING AND THE HISTORICAL SPIRIT.

BROWNING is in many ways remarkable as reflecting the intellectual tendencies of our time. The great perennial problems, the meaning of human life, and the comparative value of the forces which enter into it, man's place in the world, his relation to God and to his fellows, his ultimate destiny, are treated by him, I think, more than by any other poet in the manner best corresponding to the particular angle at which they press upon us for solution. He is by far the strongest and most helpful of recent English poets, the "nearest to our business and bosoms." The difficulties with which he grapples are our difficulties. But the modern peculiarity about him to which I wish at present to call attention and to illustrate by special reference to his short poem, *Pheidippides*, is the extraordinary development in him of the historical spirit.

This, as is well-known, is a thing of quite recent growth. The eighteenth century was practically destitute of it. Men like Kant even were quite destitute of it. Hegel may be said to be the first thinker to grasp and apply systematically on a large scale the point of view that the thoughts of men in former ages were not quite like our thoughts, that one must bring something more than mere logic to bear upon them if one is to understand and appreciate them. He says that it was not enough merely to refute their views by showing that they did not follow a perfectly consistent system, or that they did not square with particular facts about the world since discovered. In order to understand them you must not only see where they were right, no less than where they wrong, but also you must see the right which was in their wrong—the real and permanent element underlying the imperfect expression which at that par-

ticular stage must inevitably be given to it. He was practically the first in short to apply the great principle of development to the study of past thought. He believed in a reason which has been working in man since the world began and finding utterance with ever increasing clearness, a light which has been "shining more and more unto the perfect day."

On this plane the sympathetic study of history becomes possible. Why should we trouble ourselves about the past unless we are to find ourselves there? If it is but a musty record of obsolete follies and mistakes, a mere happy hunting ground of errors for the formal logician where he may exhibit his skill in explosion, it is nothing to us. It is something only on condition that there is reason there which responds to the reason in us, and that we are capable of finding it. We must have imagination enough to make ourselves at home in the world of men long dead, to catch the full accents of their language, to get inside of their minds and look at things with their eyes, if we are to gain anything from them besides the barren principle of feeling our own superiority—the superiority of dwarfs on the shoulders of giants—if we are really to learn from them and be helped to a fuller perception of that particular aspect of the truth which was brought home to them with especial clearness at their peculiar point of view. Thus our inward life is widened and enriched and brought a little nearer to the perfectly rounded completeness we ought to aim at. It is like mountain-climbing—a toilsome process no doubt, but one which just by reason of the exertion forces open, as it were, hitherto unused breathing-cells in our mind, enlarging our receptivity for the all-encompassing vitalizing air of reason by which we live.

There is no poet, I make bold to say, in any language who can give us so much help in this direction as Browning. None, so far as I know, has set himself in such a definite way and with so much expenditure of reading and thought to explore the past and to present life-like pictures of many of its most pregnant moments. Shakespeare says the main business of the drama is "to hold the mirror up to nature and show the time its very form and pressure." Browning has done this, not as a great dramatic artist in the ordinary sense, producing effective stage-plays, but with a wonderful intensity nevertheless of real dramatic force which amounts almost to clairvoyance across the centuries—so great is the power he wields of penetrating the souls and realizing the environment of his historical figures. He may be said to have shown us the form and pressure not only of our own time, but of many times. To the ordi-

nary poet the past is merely a convenient frame, securing the necessary remoteness and detachment to give him perfectly free play in creating his ideal world. He does not waste time in accurate study or careful delineation of its distinctive historical features or thought forms. He uses it merely to abstract from all particular conditions, to emerge into the universal. He makes his people speak as if they belonged to no particular time and is not for the most part sensitive even to quite palpable anachronisms. Not so with Browning in the class of poems to which I refer. In these his study of the past approaches the scientific. He tries to realize it as it actually was, immerses himself in its detail until it becomes alive and visible for him once more in its own distinctive dress and fashion, audible in the very tones of its voice and tricks of its thinking. Hence arise, I think, to a considerable extent the difficulties and obscurities found in him. He is so full of his subject when he writes, brims over so with the significant minutiae which are for him at the moment pregnant with the characteristic life he is trying to express, that one, to whose mind the time is less present in all its circumstance and nuances, often finds great difficulty in following him and craves foot-notes. Indeed after his memory had lost something of the freshness of immediate impressions inspiring a poem written long before, one might imagine him rather at a loss himself to explain some of his own allusions.

Browning set himself quite consciously to this task of exploring the past, with a perfectly clear conviction of the profits towards spiritual fulness attainable thereby. In the beautiful and characteristic little poem, "Evelyn Hope," he represents the lover of the dead girl as consoling himself with the hope that when the time is ripe, and he himself has gained the due maturity, they shall be reunited:

But the time will come,—at last it will,
 When, Evelyn Hope, what meant (I shall say)
 In the lower earth, in the years long still,
 That body and soul so pure and gay?
 Why your hair was amber, I shall divine,
 And your mouth of your own geranium's red,
 And what you would do with me, in fine,
 In the new life come in the old one's stead.
 I have lived (I shall say) so much since then,
 Given myself up so many times,
Gained me the gains of various men,
Ransacked the ages, spoiled the climes,

Yet one thing, one, in my soul's full scope,
 Either I missed or itself missed me,
 And I want and find you, Evelyn Hope!
 What is the issue? let us see!

Here is Browning's own programme of intellectual effort. This is just what he has done. He has "gained him the gains of various men." No other writer has shown such avidity for the study, the precise psychological nay pathological investigation of all types of significant human specimens, artists, musicians, quacks, patriots, and every possible variety of lover. He has lived in the souls of all of them and seen the world through their eyes. And certainly no poet at all has so "ransacked the ages spoiled the climes," as he has. What an astonishing range he exhibits from the study of pre-historic man at the point where he is barely differentiated from the animal in Caliban, down to the most modern political types in Prince Hohenstiel-Schwangau, his pseudonym for the third Napoleon! The mere names of a few of his poems which fall under this historical class will suggest both the variety and the success of his achievement in this line. *Fra Lippo Lippi*, *Andrea del Sarto*, the Bishop orders his tomb, a *Toccata of Galuppi's*, *Filippo Baldinucci on the Privilege of Burial*, a *Soliloquy of the Spanish Cloister*, the *Heretic's Tragedy*, *Holy Cross Day*.

All of these deal with the Middle ages where he was perhaps most at home. But of course a man like Browning could not fail to be actively interested in the two peoples who were the originators of almost everything which goes to make what we call civilization—Israel and Greece. If one wishes to realize the pagan culture of the world in which Christianity made its first appearance, a necessary document is "*Cleon*." If one would know what it had to offer that world one must read "*The Strange Medical Experience of Karshish*," and "*A Death in the Desert*." Quite a considerable portion of his work deals with the Greeks. Curiously enough, like Ruskin, he does not seem to have gone very deeply into their art. What he has to say of Greek Sculpture in "*Old Pictures in Florence*," is not particularly sympathetic.

He seems to have thought of that as being content with a mere limited external perfection of form, and as lacking in that groping after the infinite, which in his eyes marked all really high human endeavour in any sphere and more than compensated for any short-coming in mechanical execution.



THE LEMNIAN ATHENE.

“That low man goes on adding one to one,
 His hundred’s soon hit :
 This high man, aiming at a million,
 Misses an unit.”

But he was profoundly seized by Greek literature. He translated the Agamemnon of Aeschylus, the Alcestis and Hercules Furens of Euripides. He is the strongest champion of the latter poet that has ever taken up the cudgels in defence of his reputation, as he has done in “Balaustion’s Adventure” and “Aristophanes’ Apology.” And of course he was intensely alive to the poignant and pathetic charm of that brief but glorious period of the world’s history to which the star of Athens gives undying splendour. Milton was a lover of Athens with some knowledge ; Byron loves without much knowledge, and not without reference to its living “maids ;” Wordsworth is curiously unconcerned about her, probably because her chief poets were dramatists, and he disliked the pomp of the buskin, preferring rather in Greek letters to pore over

“Some Theban fragment or unroll
 Some precious tender-hearted scroll
 Of pure Simonides.”

But Browning, as is characteristic of him, both loves and knows.

II.

PHEIDIPPIDES.

To illustrate shortly Browning’s methods in this historical kind, let us look at what one may call his ballad of the Greek wars of liberation—the short poem “Pheidippides.” It is not necessary to repeat to readers of the *QUARTERLY* the well-known story of the struggle whose decisive turning-points are marked by the magic names of Marathon and Salamis. Every one will recall to mind how all the future of liberty and civilization, bound up as it was with the little city-states of Hellas, threatened in that crisis by the overwhelming material force of the Eastern Colossus, Persia, then hung in the balance—how Athens, too, destined to be the quintessence of all we mean by that imperishable force called Greece, proved first in heroic deeds as the protagonist and martyr of freedom the vitality which afterwards blossomed into her literature and art, and made her the soul and symbol of her race, and all it has been to the world. It was a conspicuous and decisive moment of the world-old, never-ending contest between mind and matter, light and darkness, free intelligent activity and brute force, the wit and nimbleness of Odysseus against the one-eyed bulk of the Cyclops ;

St. George and the Dragon. On the one hand were the vast resources in men and money of the greatest empire, as compared with all contemporary states, which has ever existed: all concentrated in the sole hands of a god upon earth before whom the highest of his subjects were but slaves prostrating themselves in abject adoration. On the other hand, the free manhood of a small people, insignificant in territory, numbers and money, but full of individual initiative and intelligent self-devotion to the common cause. No other power has ever been in such comparatively exclusive possession of the world's wealth as Persia was. The great king's revenue amounted to 7,600 talents a year, about £3,000,000. Athens, even long afterwards, when in consequence of the part she played in these wars she too in her turn became a tyrant city, the head of a considerable empire over the islands and seaboard towns of the Ægean, drew no more than 600 talents of tribute, considerably less than a tithe of that amount. At this time, when she stood out as champion of Greece, she had no resources except the indomitable spirit, the hardy poverty of her people.

Such is the situation which Browning here revives for us in the full glow and pulsation of its impassioned life, laying bare the secret springs of its innermost movement. With his wonderful power of plastic concentration, he paints on a small canvas the picture which reveals or suggests his entire conception of this historical movement, and thus gives us *in nuce*, the essence, as he understood it, of a whole extinct world and its impelling forces. He has done this in many other cases. "The Bishop Orders His Tomb," for instance, will occur to everybody. His way of setting about the task here is in many ways characteristic. He chooses a typical figure and a significant incident which, by his almost incredibly bold handling, and the liberal additions of his own invention are made to tell us all he has to say. The whole body of his raw material he takes from Herodotus. At least I have not been able to find a single additional detail of the story, as he tells it, in any other ancient writer. And yet he has many details, as we shall see, of which the father of history was quite innocent. Browning seems simply to have invented these, obeying some inward pressure of his own artistic instincts, some impulse to express more fully the various aspects of the whole fact before his mind, which it is our business, so far as we can, to explain.

The story of Herodotus (Book VI, Chapters 105, 106), interpreted, modified, and freely expanded by him to suit his purpose is as follows :

"In the first place, while they were still in Athens, (i.e., before they had left for Marathon) the generals sent as an envoy to Sparta, Pheidippides, an Athenian citizen who was at the same time an all-day runner and made a business of it. With him, according to Pheidippides' own statement in his formal report to the public, Pan chanced to meet in the district of Mount Parthenion which is above Tegea. Calling aloud upon Pheidippides by name, Pan, as he said, bade him make report to the Athenians and ask why they paid no attention to him, though he was their good friend, and had on many occasions done them service in the past as he would yet in the future. And so the Athenians, after they had put their affairs on a good footing, believing this story to be true, established a shrine to Pan under the Acropolis, and have, ever since that message, propitiated the god with sacrifices each year and with a torch-light race.

On the occasion referred to, when, as he said, Pan appeared to him, this Pheidippides, sent by the generals was in Sparta on the second day after he left Athens, and on his arrival appeared before the magistrates and spoke thus: 'Lacedæmonians, the Athenians ask you to come to their rescue and not stand by to see a Greek city of great antiquity fall under the yoke of barbarian masters. For, as it is, Eretria is enslaved and Greece is the poorer by the loss of a famous city.' So he delivered the message entrusted to him. But the Lacedæmonians, though well-inclined to help Athens, found it impossible to do so forthwith, because they did not wish to violate their usage. For it was then the ninth day of the month, and on the ninth they could not march out, because the circle of the moon was not then full."

The three points of this simple narrative are at once seized by Browning's intuition as gathering up the whole meaning of the Persian wars among other things: the God Pan, Pheidippides, and the behaviour of the Spartans. Yes! it was indeed the mountain-god who brought victory to Greece! Pheidippides the fleet and eager before whose impetuous spirit the long rough way of his record-race is "like stubble, some field which a fire runs through," is to him Athens herself in a single, brilliant, youthful form. Athens irresistibly burning her way into the future, swift and generous and young, thrown into relief against the stupid conservative inertness of Sparta, her pharisaic bondage to ceremonial use and wont, the burden of the dead past, her incapacity to leap through all obstructions of consecrated trivialities to the height of a sovereign duty, and the call of a great crisis—all explained at bottom by the want of a single eye, lurking selfishness and mean

jealousy of the city already divined as a destined rival which is menace, with ruin (not very sincerely deprecated at Sparta) in her post as bulwark of Hellas.

This is what Browning sees in the sober words of Herodotus. At the touch of his interpreting imagination they take flame and sparkle with many colored suggestion. The significant elements of the narrative are thrown into strong relief, and made much more of than they meant to Herodotus. If you had asked him how then had Pan made good his promise of succour to the Athenians, he would have replied no doubt: "By the use at Marathon and Salamis among the Persian ranks of his well-known power to arouse a sudden miraculous terror, the so-called "panic fear."

But to Browning the significance of Pan has a very much wider range than this. To him Pan is the spirit of the Greek mountains, Greece is a land of hills and valleys, "pits and peaks." The poet is careful by snatches of haunting, jagged music to stamp that upon our minds. The East is the place of vast plains, the natural habitat of great despotisms. Hellas, on the contrary, is the predestined theatre of freedom. There man's sense of himself as an individual is not dwarfed by the oppressive visible predominance of an immense overwhelming outward nature in whose presence he shrinks into insignificance. He can "lift up his eyes to the hills whence his aid cometh," cope as an equal with the limited world they frame for him. In such an environment he can find himself, subdue it to himself, and make it a home to love. It is indeed a "poor thing": he cannot amass great wealth in it, but it is really "his own." He can penetrate it with his humanity. "Its very dust to him is dear," yes and divine too, full of "gods of my birth-place, demons and heroes, honour to all!" Thus even its poverty, Pan's bare rocks, becomes rich in the wealth of the spirit. In such a land men may come to conceive of the dignity of manhood and claim it for themselves as the one indispensable good without which they refuse to accept of life at all. Free communities may arise there within the mountain barricades, the sheltered gardens where freedom can grow and be kept safe. Therewith too the fruits which can breathe no other air than freedom's, laws, and civic life, art and literature and science. There was no hindrance in Asia to the unlimited extension of the Persian power. It was broken and hurled back from the mountain-walls of Greece. No scope there for its bowmen and cavalry, or for the effective deployment of its vast numbers of troops. The "two voices" which Wordsworth says have always been the tongues of freedom "of the mountains

and the sea," spoke mightily for Greece in this struggle. It was well seen that their gods were "gods of the hills," Persia's "gods of the plains."

Browning makes all this suggestion alive in the figure of Pan as he elaborates him here. The first verse of the poem, strikingly and subtly Greek in sentiment and even in syntax, heralds the introduction into Athenian worship of a new god not enough recognized there before. The Athenians had not rightly judged the "Gods," the permanent forces in human life on whom they could count to help them in their need. It was necessary for them to get down far deeper than they supposed to the naked facts and simplest terms of things, to the primitive basis of their stock's original, ancestral instincts and forces, almost forgotten by them. From Pan's bare peaks "no deity deigns to drape with verdure" their help should come. Their strength was in their mountain-blood, their own self-help and hardy poverty. "The Shepherd in Virgil," says Dr. Johnson, in a similar case repudiating the aids of wealth and splendour, "at last found Love and found that he was a native of the rocks." "Zeus, the Defender," the symbol of the Panhellenic bond was not to assist them much. Their Spartan allies were to leave them to their fate. Phoebus Apollo's dubious oracles were to breathe a very faltering inspiration. Even their own Athene, the representative of their ordered civic life, would not avail them so much as they thought. Her city was to be made desolate, her sacred olives cut down, and her shrine on the Acropolis destroyed with fire. The time had not yet really come for her. In spite of the old legend she was not yet fully born. These very wars were the travail-throes of her true birth. From these she was to emerge for the first time in her splendour, full-armed in war, and gracious in the victories of peace, "yet more renowned than those of war." Meantime her people were to be stripped quite bare of all the lendings of culture, of all gifts from the civilizing powers in whom they made their boast. The old unsophisticated goat-herd Pan was to give the most effective succour after all.

Such being the poet's conception, as he takes considerable pains to make very plain, it will not surprise us much that he takes the liberty of changing the scene of Pheidippides' meeting with Pan. Instead of Parthenium between Arcadia and Argolis, he calmly reads Parnes, with a "sang froid" which turns the exact scholar's hair grey. He makes this courier, who was in such haste, go ten miles out of his way at the risk of spoiling his record! Yes, of course he does. He must have an Attic hill at all costs, when what

he wants to say is that it is the spirit of her own mountains, her own autochthonous vigour, which is going to save Athens. He consciously sacrifices, in a small and obvious point, literal accuracy to the larger truth. He has too much faith in human intelligence to suppose that any one will dream of thinking him guilty of an ignorant blunder, impossible to quite other school boys than Macaulay's. The man who knows that at this period the archons of Athens were "topped by the tettix," that as Thucydides tells us "the older Athenians wore their hair done up on the back of the head and fastened with a clasp of golden grasshoppers;" the man capable of this minute touch of archaeological accuracy where it subserves his artistic purposes, to say nothing of the precise and fine knowledge as well as the large vital grasp of Greek life and feeling which everywhere, even in the melody and verbal turns of this poem, exudes from him, was certainly aware of the geographical position of Mount Parnes.

His treatment of the Spartans, also, is to some extent deflected from the original by the breadth of his aim and the exigencies of his art. Herodotus evidently believes that their tardiness was due simply to honest dullness. They were well inclined to help but were prevented by their notorious Sabbatarianism, so to speak. Their high festival of the Karneia in Apollo's honour was in process. It lasted nine days, from the seventh to the fifteenth of the month named after it, and in order to ensure that it should be kept entire as a holy season, their sacred law forbade any expedition during that month before the moon was full, that is before the fifteenth. No doubt it would have been well if they had remembered Hector's noble words: "The one best omen is to fight for father-land." No doubt they would have, if they had been good enough allies, and good enough lovers of Greece to take the danger of Athens very seriously to heart. But Browning goes quite beyond the probabilities of the actual situation when he represents them as moved by secret hatred. His object is two fold. On the one hand he is generalizing as usual. He wishes to fix the characteristic attitude of Sparta to Athens during the course of the Persian wars taken as a whole, and afterwards. On the other hand he needs the effective foil of contrast in the envious sluggishness of Sparta, for the generous forwardness, the alert and fiery youthful spirit of Athens, visibly present before us in the runner Pheidippides who stands there "quivering, the limbs of him fretting as fire frets, an inch from dry wood," while the sapient grey-beards wag their heads, and slowly ponder, and at last solemnly deliver themselves of their wise and well-

weighed reasons for doing nothing. Again he gets the larger truth. It is just as he flashes his picture of them that the total image of these two cities dwells in our minds.

But it is with the figure of Pheidippides himself that Browning takes his most daring liberties. He has treated his original here with a freedom which certainly does seem at first sight to pass the boundary line of sheer audacity and caprice. He has permitted, a hostile critic might be disposed to say, the wildest licence to the exuberance of his Gothic fancy, tricked out the austere ancient story with fundamentally discordant arabesques. He has at least boldly invented liberal additions—not without his reasons I think. Here is the catalogue of his outrages.

Pheidippides in Herodotus is evidently a mature man probably with a wife and children. A certain maturity would seem to be implied in the staying power he shows. A youth is good for a spurt, but for a steady pull of some 170 miles done well within forty-eight hours, over exceedingly rough country, you need a tough old hand. He is simply a professional courier, such as the great chiefs used to have about them in the Scottish Highlands, no doubt well paid for the job. He is an Athenian citizen, it is true, and evidently throws a good deal of heart into his work. After all something beyond pay must have inspired such a record. And his words before the Ephors, unless we are to suppose them a mere message delivered by rote, are burning words. We may well surmise too that not every athlete would have heard Pan speak. Still Herodotus' Pheidippides is not a hero of romance. After he has made his report in Athens we hear no more of him. He sinks into the life of a private citizen, discharging all his duties there, including his fighting as a hoplite, in a thoroughly reputable manner, we may be sure, but with no conspicuous halo round his head beyond the memory of his one famous race. So far as I have been able to discover, there is not a single word in ancient literature to lift the curtain of obscurity which falls upon him after he has once delivered to the Athenians the message with which the god had charged him.

But Browning knows a great deal more and better about him than this meagre total. He was not a mature man, he was a youth "at the age when youth is most gracious," as Homer says. Pan charges him not only with a message, but with a love-token to Athens—a bunch of fennel prefiguring the Fennel field where he is to lend them aid. What a pretty Gothic fancy is this flowering on the old Greek trunk and called into life by the name of Marathon! Surely no one would have the heart to cavil at this addition. But,

further, Pan has a promise for Pheidippides personally, not for Athens only, as the severe old historian would have him content himself withal:

"Count on a worthy reward. Henceforth be allowed thee release
From the racer's toil, no vulgar reward in praise or in pelf!"

His own belief is that the god refers to a certain maiden that "keeps faith to the brave," whom after his and Athens' wars are over Pheidippides shall wed, and who will bring a brood of young Athenians some day about his knees to listen to his tale of how:

"the god was awful but kind,

Promised their sire reward to the full—rewarding him—so!"

Very beautiful, but alas! hardly Athenian, at least so far as the maiden is concerned. The wholesome honest affection of plighted youth for freely-plighted maid which could look forward to "seven years but as a few days, for the love he had to her" was not distinctively at home in Athens. The maidens there were kept close under lock and key in oriental segregation and a youth, such as Browning makes Pheidippides to be, would have scanty opportunities of entering into this romantic attachment even if, which is very unlikely, he had been so disposed.

Pheidippides, however, is mistaken as to the god's promise. A still rarer and nobler reward than he deems is in store for him. He has one more race to run—from Marathon to Athens as the messenger of victory.

"Unforeseeing one! Yes, he fought on the Marathon day:

So when Persia was dust, all cried "to Akropolis!

Run, Pheidippides, one race more! the meed is thy due!

'Athens is saved, thank Pan,' go shout!" He flung down his shield,

Ran like fire once more: and the space 'twixt the Fennel-field
And Athens was stubble again, a field which a fire runs through,
Till in he broke: "Rejoice, we conquer!" Like wine through clay,
Joy in his blood bursting his heart, he died—the bliss!

So to this day, when friend meets friend, the word of salute
Is still "Rejoice!"—his word which brought rejoicing indeed.

So is Pheidippides happy forever,—the noble strong man
Who could race like a god, bear the face of a god, whom a god
loved so well;

He saw the land saved he had helped to save, and was suffered to tell
Such tidings, yet never decline, but, gloriously as he began,
So to end gloriously—once to shout, thereafter be mute:

"Athens is saved!" Pheidippides dies in the shout for his meed.

"The words of Mercury are harsh after the songs of Apollo." With the solemn and yet springing triumph of this dactylic rhythm flowering into intricate rhyme, Greek and Gothic intertwined again (the same in effect as in that other optimistic pæan of Browning's, Abt Vogler) the rhythm which sings itself quite inevitably to the swinging stride of the all-day runner, sounding in our ears; with this noble characteristic burden of victory for man over life and death stirring our blood like the sound of a trumpet, it is the merest impertinence of pedantry to point out how the poet has gone outside of his brief, or even to justify in frigid detail the exuberance of his creative imagination. Pure invention you say! Well, if he can invent like this good speed to him; let him go on inventing!

He really could not help it. The muse constrained him. Not one touch but had its inward necessity. Scarcely one which is not vitally Greek. Pheidippides is Athens as we have seen. And Athens is not Miltiades, Cimon, Pericles—her lofty names in history-books who have had their reward, if not in pelf, at least in praise from the coarse loud mouth of fame. Athens, if any state ever was, is the mass of the people, the democracy, every man of whom, as Thucydides tells us, is capable in a crisis "of thinking that things are at a stick where he is not personally engaged!" Pheidippides, whose name comes in casually, only in two short chapters, is her real representative in the revelation of poetry, not Miltiades. She is the undistinguished throng of "men of good will" but little known to the world's "coarse thumb;" the humble heroes whose heroism growing in unnoticed places, like hedge-row roses, content and inspired by the rewards accessible to all, the real solid prizes of life, yet common as the air, plain duty done, a name undishonored, home and children and freedom, (this is the true, and thoroughly Greek and human significance of Pheidippides' private aspirations—not the somewhat un-Athenian maid who is merely an indispensable preliminary) the humble heroes like Hervé Riel, the Croisickese, whom Browning delights to honour, such a gallery of whom he has lifted into constellations.

Pheidippides is Athens. Therefore he must be young, and we must see him conquer at Marathon, and hear him sing his "Tenella Kallinike." It is no matter of choice for Browning whether he is or is not to take farewell of him at the point where old Herodotus does. He must bring the story and him who is the soul of it to an end which shall not be a "lame and impotent conclusion." What shall it be? Herodotus himself gives the only possible answer, in his beautiful tale of Kleobis and Biton. Their mother prayed that

for their shining act of piety the Goddess should reward them. Her prayer was heard. They went to sleep in the temple and never awoke. So with Pheidippides—he strikes out his star in the sky and ceases in that moment. What a bathos it would have been to have dragged out a longer term! Whom the Gods love die young. Athens, too, died young. For us, as we look back, is not her brief meteoric career well symbolized in this fiery young racer who leaves a swift track of light behind him and then goes out in the moment of splendid achievement, dies of his own overplus of life and joy? And finally the invention which audaciously connects the common Greek greeting, older than Homer, with Pheidippides—is this not quite delightfully in the manner of a Greek legend? “Rejoice, we conquer.” Is not that too, Athens’ and Pheidippides’ last word to us, if we are fighting in the same cause? *E pur si muove!*

JOHN MACNAUGHTON.

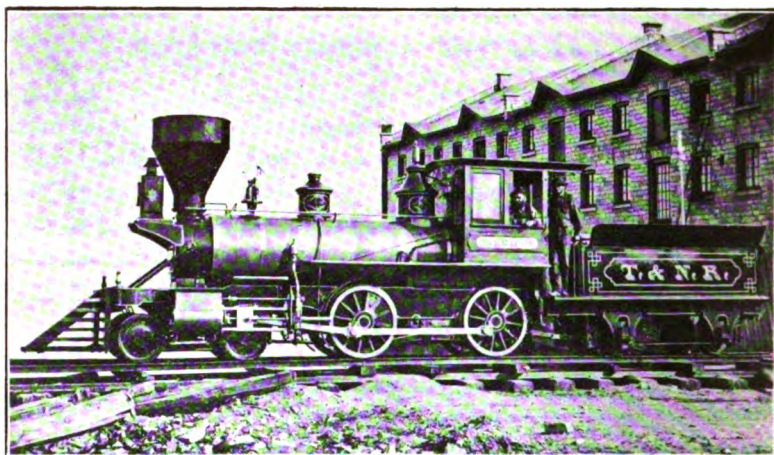
THE CANADIAN LOCOMOTIVE COMPANY, LIMITED.

HISTORY OF THE WORKS AT KINGSTON.

THE history of the Kingston Locomotive Works goes back for more than half a century and constitutes a small but not uninteresting chapter in the general history of Canadian industries. The works were first established in Kingston, under the name of "The Ontario Foundry" by the firm of Tutton and Duncan. This was about 1850 at a time when Kingston was a political centre of considerable influence and a possible competitor for the seat of government. The Ontario Foundry which was meant for the building of stationary engines and general machine repairs, was not successful in the hands of its first promoters, and in 1854 was sold to Messrs. Morton & Hinds. By this time railway construction had started in Canada with the Northern and Grand Trunk Railways, and the new firm went into the manufacture of locomotives. The scale of production was somewhat limited, the maximum capacity of the works at that time being about six engines per year, although the engines of that date were only about one-sixth the size of those which are being built in the shops at present. The firm of Morton & Hinds continued to conduct this enterprise with more or less success until 1865, when a Company was organized known as the "Canadian Engine and Machinery Company," with a capital stock of \$250,000, and having for members some of the most prominent men of that day in Canada, amongst whom might be mentioned: Mr. C. J. Brydges, at one time Managing Director of the G.T.R.; Mr. Joseph Hickson, who succeeded him in that position; Mr. George Stephens, (Lord Mount-Stephen); Mr. Robert Cassils of Toronto; Mr. W. G. Hinds of Kingston; Mr. E. T. Taylor of Montreal; Mr. Jos. R. Reekie of Montreal; Mr. John Rankin of Montreal; Mr. John Shedden of Montreal; Mr. John Molson of Montreal.

From 1865 to 1878 this company conducted the business. It achieved no great success, however, for at the latter date a new company was organized for the purpose of buying up its assets and making a new start.

This company was known as the Canadian Locomotive and Engine Company, and its principal stock holders at the beginning were: Sir Francis Hinks, at one time Minister of Finance; Messrs. Jas. Reekie, Jno. Rankin, George Stephen, Alfred Brown, Mrs. Jno. Hinds and Robert Moat. This company was as unsuccessful as its predecessors in establishing the business on a permanently profitable basis, and in 1881, after some vain attempts to interest American



LOCOMOTIVE OF 1860.



LOCOMOTIVE OF TO-DAY.

capitalists, and after having offered the works in turn to the Schenectady Locomotive Works, the Cooke Locomotive Works, and other American companies, was about to pass into the hands of the liquidators. At this juncture a number of Kingston gentlemen united to take over the enterprise and save the works for Kingston. Prominent amongst these were the Hon. William Harty, the late Hon. Sir Geo. A. Kirkpatrick, the late Mr. John Carruthers and Mr. A. Gunn. The Hon. Sir R. J. Cartwright, Hon. John Hamilton, Hon. Thomas Ryan, Mr. James Richardson, Mr. John McKelvey, Mr. John Breden, and others were also amongst the new stockholders. The new company was organized in April, 1881, with Sir Geo. A. Kirkpatrick as its President and Mr. Harty as its Managing Director. The head office of the company was transferred from Montreal to Kingston, the majority of the stock now being owned in the latter city.

Now began probably the most prosperous period in the history of the enterprise. On May 2, 1881, the Canadian Pacific Railway had turned the first sod on its line, and the market which it and the Intercolonial Railway afforded was turned to excellent account under the energetic management of Mr. Harty. The raising of the tariff on American locomotives from 17½ per cent. to 35 per cent. also contributed materially to the prosperity of the new company, and up to 1883-4 liberal dividends rewarded the confidence of the stockholders. In 1884-5 business was slack owing to bad times, but in 1886 trade again improved and the company was in excellent condition when it became known to the management that Messrs. Dubs & Co., of Glasgow, Scotland, had under contemplation the establishing of competing works at some point in Canada. Negotiations were entered into with them, which resulted in their acquiring a controlling interest in the company. This was accomplished in the same year. The Hon. Wm. Harty resigned his position as Managing Director, and the management of the works practically passed into the hands of Messrs Dubs & Co., of Glasgow, who were represented here by Mr. Leigh, in the position of Superintendent. Under the new management the works, though they continued to be actively operated for some time, were not a success. The new Superintendent was an estimable gentleman, an excellent draughtsman and experienced in locomotive construction, but partly owing to the mixed character of the control, and partly to the different conditions of doing business in Canada, the works did not prosper. The times too, were dull, most of the Intercolonial and C.P.R. orders were placed in the States, and the management did not succeed in making a profit of what trade they got. The number of men employed at the works dropped from 500 to 150 or even 100. Finally the Scotch firm, despairing of being

able to make a success of the enterprise, gave up their stock to a syndicate of Montreal gentlemen, who took up the business. They also, however, were unsuccessful and in 1900, the banks who were creditors of the concern applied for the appointment of liquidators, and practically placed the company in insolvency. The works were closed down and remained idle for some months.

At this point the Hon. Wm. Harty once more stepped in and pulled the business out of the slough into which it had sunk. In November, 1900, in association with Messrs. Haney & Bermingham, he purchased the property from the liquidators and organized the present company under the name of "The Canadian Locomotive Company, Limited."

The times were again propitious. The Intercolonial Railway needed engines; the Great Northern Railway was under construction, and the certainty that the development of the North-west would bring other railways into the field all promised a good market for the builders of locomotives. The results were not disappointing. The new company under the management of Hon. Wm. Harty and Mr. Bermingham made an excellent start, reorganizing the shops with the latest improvements in machinery and succeeding as soon as it got into full working power in turning out a locomotive a week. It gave employment to about 520 men and in the second year declared a good dividend to its stockholders.

There was every prospect of it doing better. It might probably have doubled its productive power, but in April, 1902, a strike of machinists, of union men belonging to the International Association, broke out. This strike has been persistently maintained ever since, causing great trouble and expense to the management in its endeavours to fill the places of the strikers, the men they employ being regularly enticed away by the walking delegates of the union. The real number of unionists now on strike is small, about a dozen men, who are subsidized from Washington at the rate of \$6 a week, to continue their obstructive tactics.

All this trouble and expense, all this loss to the company and the men, and the city, arose not over any question of hours or wages, but because the management insisted upon the right of hiring, discharging and promoting whom they pleased, while the union demanded, not only that preference should be given their American organization over machinists who were members of the English Amalgamated Society of Engineers, but that no handyman should be promoted to a machine, no matter how competent, industrious, or deserving he might be, and that a certain handyman, who had been promoted, should be taken off the job which had been given to him. How far

the labor unions will seek to enforce this principle of absolute exclusion, and by what methods, is a question which the whole country will soon have to consider. In the present case it was the more unfair that a very large number of the men belonging to the union which made this demand are themselves promoted handymen, who were promoted in this very shop.

Perhaps the most alarming feature of the case is the domination which a foreign union is able to exercise over a Canadian industry. What does a committee of American labor leaders sitting at Washington care for the growth of Canadian industries? It is a great chance if their real feeling is not the other way. They may be expected to show great moral courage in insisting on the rigour of their rules, great firmness in refusing to make any compromise. They are not themselves under Canadian law and cannot in any emergency be brought under it. It is this situation which makes the intractable nature of the present strike. There is danger for Canada here. Her rising industries may at any time be checked and crippled at the pleasure of a foreign union whose interests may actually lie in doing that. A country whose labor is under such a system of foreign control is very likely to find itself paralyzed just at the time when it might have the best chance to develop.

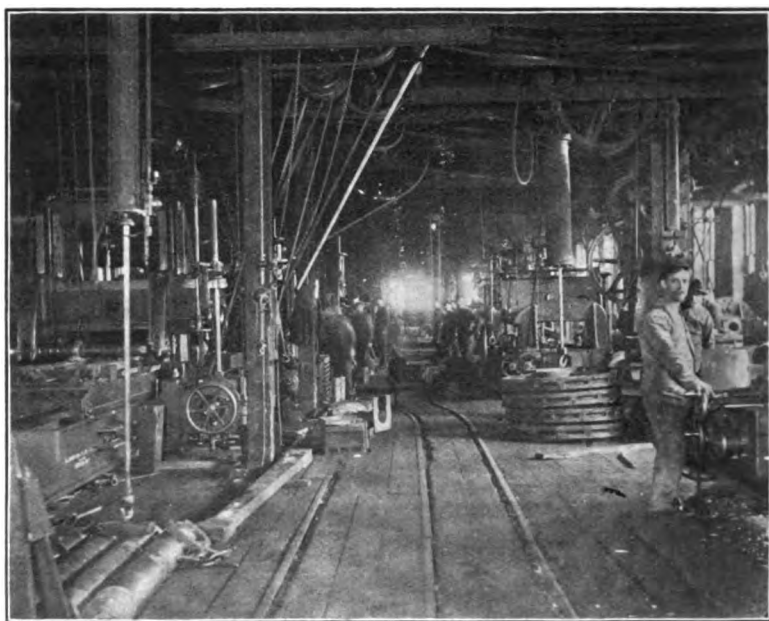
THE MANUFACTURING DEPARTMENT.

The manufacturing department is under the charge of Mr. Harry Tandy, Superintendent, and Mr. Wm. Yellowley, Assistant Superintendent. This department consists of seven distinct units, viz: The designing or drawing department, the smithy, the boiler shop, the foundry, the wood-working shop, the machine shop, and the erecting shop.

The work of building a locomotive commences with the preparation of drawings from specifications and the making of patterns according to these drawings. Then the material has to be ordered, a large portion of which, about a half of the whole in value, has to be imported from England and other European countries. When this material arrives, it is unloaded by the aid of a large steam jib crane and wheeled on trolleys into the different shops, the boiler shop, the forge and smithy, or the foundry, according to the work to be done on it. Into the boiler shop are taken the boiler plate, tank plate, rivets, stay bolt iron, and all such material, to be sheared, punched, drilled, rolled, flanged, pressed, and hammered into shape, and finally riveted up. The boiler, after being caulked at all the seams, is loaded on a truck and taken to its destination in the erecting shop. The weight of a boiler complete for an average sized locomotive is about

seventeen tons. The machinery of this boiler shop consists principally of punches, shears, rolls, planers, drills, large steam riveter, and a pneumatic plant for rivetting, tapping and caulking. Compressed air for plant is furnished by a duplex air pump. Here and there are fires for heating and flanging plates, and forges for heating rivets. About 57 men are employed in this shop.

The forge and smithy, in which all the wrought iron work is produced, contains five steam hammers, two forging furnaces, besides a large number of smith hearths, a large case hardening furnace, a



bolt forging machine, a powerful bending machine (commonly called a "bull dozer"), as well as a couple of fans for furnishing the necessary blasts for the furnaces and hearths. Near the furnaces is a pair of alligator shears for cutting up scrap iron, which is afterwards put into piles and placed in the furnaces and heated to a white heat, then taken out and pounded into shape by the steam hammers, the biggest one being capable of striking a blow of three tons, or light enough to crack a nut without injuring the kernel. The product of this shop varies in size and weight to a very great extent, the lightest piece of forging weighing only a few pounds, and the heaviest about two and a half tons. The hammers are operated by steam which is supplied by boilers placed over the furnaces and generated by the waste gases from the furnace. The company employs about 70 men in this shop.

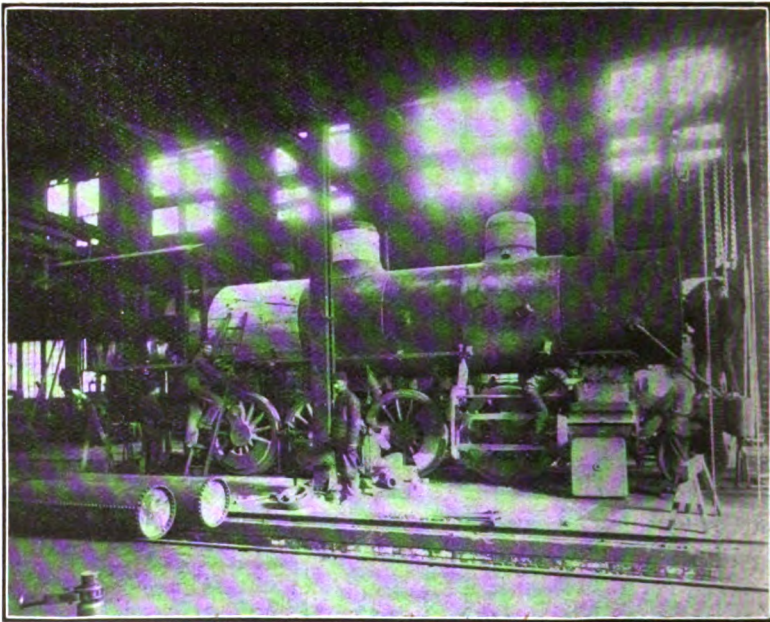
Next to the smithy is the foundry, where the castings are produced—both iron and brass. Two large cupolas are used for the purpose of melting the iron, which is run into ladles, carried by cranes, and poured into the molds, which are composed of sand, which is ramed into cast iron boxes. This melting is done each day just before quitting time and iron is allowed to remain in the molds all night. The following morning the boxes are removed and the sand falls away from the castings, which are then cleaned and taken into the machine shop. The cupolas in which the iron is melted are huge cylinders made of steel and lined with fire brick. A pneumatic hoist is used for the purpose of charging them after lighting up, the blast is turned on from a fan driven by an electric motor. The castings which are the product of this shop vary in weight from a few ounces to three and a half tons each. The number of men employed here is about 40.

The products of the foundry and smithy are then carried to the machine shop, a two story building which is fitted with tools of great variety and size, such as lathes, planing machines, slotting machines, shaping machines, milling machines, boring machines, drilling machines, tapping and sewing machines, hydraulic presses, besides a large number of portable and hand machines too numerous to mention. There is a tool room in connection with this shop in which a considerable variety of work, such as taps, reamers, gauges, dies, are made and repaired. Here the materials received are turned, shaped, slotted, planed, milled, chiseled, filed, and drilled into the exact shape and dimensions required. They are then sent over to the erecting shop.

The erecting shop is a large one story building equipped with overhead cranes for handling the details while the engine is under construction. In the first place the boiler is placed over the pit and the process of erecting begins. First the cylinders are bolted in position, then the frames, afterwards the motion and spring gearing, the cab and some of the other fixtures. The boiler is then tested, afterwards the engine is raised up and wheels put in place. Then the mountings are put on. When all is completed and painted, the engine is fired up and tested under steam and then shipped to destination.

About 240 men are employed by the company in the machine and erecting shops. It is amongst the workers in this department that the strike referred to in the first part of this article broke out. At one time a machinist was understood to be a workman who could take any drawing from the designing shop and produce the article on all the machines required for the work. But the high specialisation

of machine work in our day has tended to alter this and produce men who are expert only with a certain class of machines. The "fitter" is still a general machinist, and the others may be classed in order as erectors, lathe-hands or turners, milling machisists, shapers, slotters, planers and drill pressers. The last class and some of the others are usually composed of handymen who have not served a regular apprenticeship. Amongst the machinists in the works, 76 belonging to the International Association went out on strike.



The wood working shop (a new building situated in the upper story of the annex which was built to the boiler shop a short time ago) where all the parts of the engine which are composed of wood are made, as well as the patterns for use in the foundry. Wood in the construction of some of the details of locomotives, has, during the last few years, been gradually discontinued, steel having taken its place, so that the work formerly done in this shop is now being done in the boiler shop. There are, however, quite a number of machines still in use, such as band, rip, and crosscut saws, mortising and tenoning machines, matching machines, planing machines and wood lathes. The patterns made in this shop accumulate from year to year to such an extent that the building in which they were formerly kept got to be too small for the purpose, and the company purchased the "marine

cottages" adjoining the works, some of which are now used for storing these patterns.

The heating of the various shops is done by exhaust steam from the various stationary engines. All the shops are lighted by electricity, power being furnished by a high speed engine. Another high speed engine is used for the purpose of driving the electric motors in use in the various parts of the buildings.

The motive power for these shops is furnished by one Corliss condensing engine, one high speed single expansion engine, and one high speed compound engine. Steam for these engines is furnished by three boilers consuming about ten tons of coal per day. To give some idea of the amount of work performed in these shops, it is interesting to note that about fourteen tons of iron and steel are used daily in the construction of the locomotives.

THE OLD AND THE NEW ENGINE.

The locomotive, like everything else, has developed with the times. The engine of 40 years ago weighing 30 tons and hauling 500 tons is a baby compared with the giant of to-day, which weighs 80 or 90 tons and hauls 1500.

Increased traffic requires either more trains or longer and heavier trains or both. As increase of the number of trains, especially with a single track road, causes difficulties in despatching and danger of delays and collisions, it is simpler and more economical to increase the size of the trains, and heavier trains require heavier engines. Thus the 30-ton or 40-ton locomotive of forty, or even twenty, years ago, has largely given place to the 80-ton or 90-ton engine of to-day. The increased weight of the engine is rendered possible by the substitution of steel for iron in tracks and bridges and increase of the size and weight of the rails.

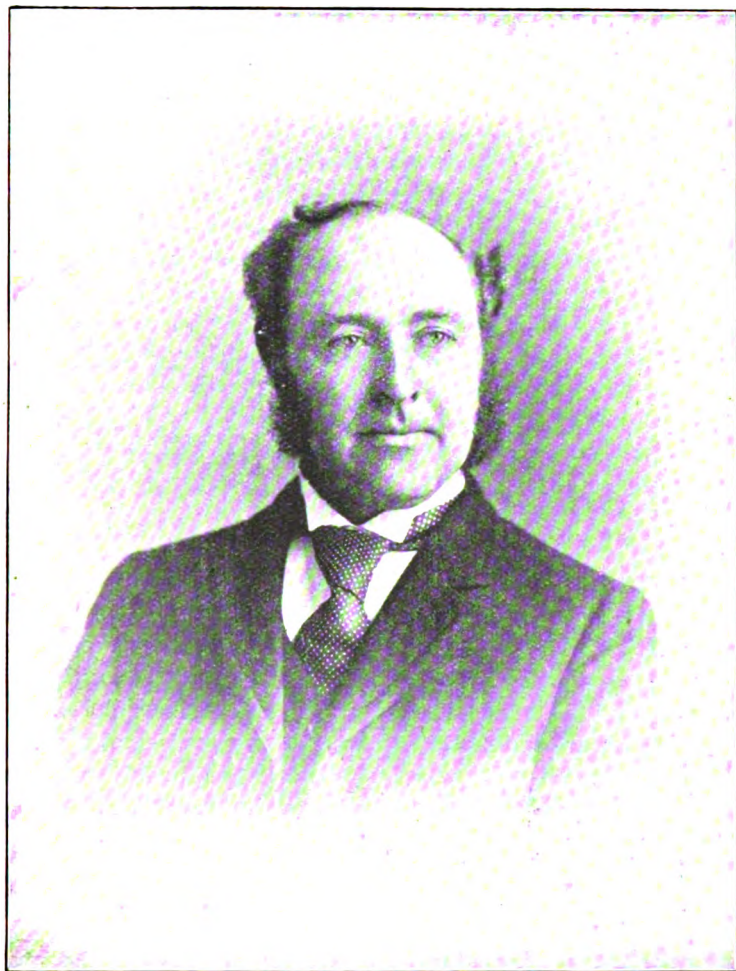
But increase of size is not the only change in the locomotive. The division of engines into distinct types, according to the work to be performed, has grown more pronounced. Care and experience in designing and the substitution of steel for brass and iron have increased the power in even greater proportions than the size. While in freight engines the size of the cylinders has been doubled, the steam pressure has also been doubled and the engines are frequently compound. The high speed passenger engine has quite a different appearance with its smaller cylinders and larger driving wheels; it too has necessitated a change in the road-bed. If the heavy freight engine of to-day would have crushed the lighter rails and broken the weaker bridges of forty years ago, the passenger train running at sixty miles an hour would have left the track at every sharp turn or

pounded itself to pieces at the rough places on the roadbed. A faster train service means straighter, smoother tracks.

The general result is one characteristic of our age, namely, increased pressure, increased strain everywhere on men and on material. This has to be met by increased ingenuity of engineering science and increasing watchfulness on the part of the personnel, engine-drivers, signal-men, conductors, &c. Engineering science does its part well, but from the growing frequency of railway accidents on this continent, it might seem that we had reached a point at which the organization of the personnel had not kept place with the greatly increased demands of the traffic.

From the accompanying cuts readers may form some idea of the characteristic differences, in appearance at least, of the locomotive of to-day and the locomotive of 1860. The former represents the consolidated type consisting of eight drivers and two truck wheels, as compared with the four drivers and four truck wheels of the American type in 1860. The much increased size of the tender is occasioned by the necessity of carrying the larger supply of fuel and water required by the increased consumption of steam in the engine of to-day. The old smoke stack of 1860 is gone, with its bulbous spark arrester at the top, the modern funnel with its concealed spark arrester having taken its place.

C.



HON. WILLIAM HARTY, M. P.
President of the Canadian Locomotive Company.

A PAGE OF GREEK EPIGRAMS.

FROM CHRYSANTHEMA BY W. M. HARDINGE.

1. *Res Humanæ—flebile ludibrium.*

'My name was'—well! it helps thee not, 'my land'—'tis
naught to me!

'My race was brave'—vile had it been, what matter
would it be?

'My life and death had fair renown'—If shame, what
could it do?

'Here now I lie'—what's that to me? and what am I to
you?

—*Paulus Silentarius.*

2. *They told me, Heracleitus, you were dead.*

One tells me, friend, that we are parted now,

And I recall how often I and thou,

In closest converse. sank the sun to sleep,

And so remembering, weep.

Halicarnassian host! somewhere thou must

Long, long ago be dust.

Yet live thy nightingales—thine own—for them

Death, that takes all, hath never requiem!

—*Callimachus.*

3. *Spartan Patriotism.*

Stranger! tell Lacedæmon—here we lie!

Hers was the word and ours the will to die.

—*Simonides.*

PLOTINUS AND PALLADAS.

(ASPECTS OF DECLINING HELLENISM.)

EVERYTHING may be summed up in a quatrain ; yet everything has so much in it that a book cannot exhaust its meaning. This is especially true in the case of a subject so complicated as the spirit of a nation ; for the soul of a man, and still more that of a nation, is not simple ; it wanders into many by-ways and treads in strange paths till we find it hard to tell which is the bypath and which the main road. Often we arrive at what we are pleased to call its essence only by more or less consciously disregarding some manifestations which contradict our theory otherwise so beautifully consistent and inclusive. In the case of Hellenism some of these by-paths are very interesting ; and I purpose this afternoon to speak of two of them which have special interest to me, because in them many a man is wandering to-day who has never heard of Plotinus, still less of the obscure poet of Alexandria whose name I have linked with that of the last Greek philosopher, because they both started from the same standpoint and by opposite paths sought the same goal.

It is the problem of every philosophy, as of every individual, to explain the discords of existence and if possible to reconcile them in a higher unity. In the childhood of the race, as in the childhood of the individual, the problem, however keenly felt, is felt confusedly and solved confusedly ; only later do we begin to analyse, to find the various causes and the various phases of our dissatisfaction. Gradually man comes to see that he must adjust himself to his environment, political and social, and that in himself also there dwells a deeper antagonism, that between the reason and the emotions, or as St. Paul more pungently if less scientifically puts it, that between the Flesh and Spirit. The earliest attempt to make a harmony of life naturally consisted in piling up external resources as a bulwark against misery, which was also conceived as external calamity. But Greek thought soon came to see that a man's life consists not in the abundance of the things which he possesses, and as was the habit of the race they illustrated this abstract idea by the concrete story of the meeting of Croesus and Solon.

"Tell me, Athenian stranger " said the Lydian king, "whom of mortal men do you consider happiest?"

This he said, hoping that his own name would be the answer. But Solon, regarding truth rather than royal favour, replied :

"Sire, Tellus the Athenian."

"In what" said the king sharply, "did his superiority consist?"

"Tellus" replied the Greek sage, "lived in a prosperous state, and goodly and virtuous sons were born to him. He saw his children's children and all in prosperity. Thus his life was calm and blessed, and in his death he won great glory: for on a time, as the Athenians strove with their neighbours of Eleusis, he bore up the battle and turned the foe to rout, and fell in the full tide of victory. And on the spot where he fell the Athenian state buried him, and public honours are even yet paid at his tomb." (Herodotus I, 30.)

It is a fair picture. With the blue sky of Attica above, and the clear, bracing, Attic air in his lungs, the country squire sits under his own vine and fig-tree; the state is at peace, his sons live peaceful and honourable lives in homes as happy as his own; round his knees play his happy grandchildren; then comes the moment of peril to the state he loves so well, and, his whole being filled with the delight of battle, consummating a life of honourable peace with one glorious crowded hour of fame, he rushes into the conflict, and dies with the shout of victory ringing in his ears, and in his heart the consciousness that to himself that victory is due. Nevertheless we can see that the deepest discords which must be harmonised have not yet been sounded. A good digestion, good crops, and healthy, honourable children are even yet very excellent possessions, but they do not constitute happiness, for happiness, I suppose, is the least unsatisfactory name which we can give to that harmony of the spirit with itself and with the world, which is the goal of human effort. Of course to the end of Greek history "comfort" was the ideal of the ordinary man, just as it is of the average present day Canadian or American. How little change we need make in the following confession of a worthy Athenian farmer to express the real feelings of thousands of very worthy so-called Christian gentlemen to-day. "I do not like fighting," says the honest fellow, "but I do love to pile up a big fire of dry logs and to sit by it with my dear comrades, drinking, and roasting peas, and to kiss the maid-servant in the scullery while my wife is upstairs. And when the grasshopper sings his sweet song, I delight to look at my early vines to see if they are yet ripe, and to watch my figs swelling. And when the first early fig is ripe, I eat it and lick my fingers, and say 'Bless the dear seasons.' For this is the way to grow fat, and not by standing in the ranks, gazing at a great, God-forsaken fool

of a general, in a red cloak and plumed helmet, who is always the first to get sick of it and run away when there is any real fighting to be done." (Aristophanes—Pax.)

And even if we consider the Greek ideal in its higher aspect, in the works of the lofty, grave tragedians and the philosophers, we shall find something of the same externality in their solution.

Plato indeed rises to a higher point of view, but Plato so far transcends the bounds of all other Greek thought that he ceases to belong to any age or any country and is a far less typical Greek Philosopher than Aristotle; for whom the good life is an artistic achievement of which the artist has some reason to be proud. Alike in Ethics and in Metaphysics the formative reason works up the inchoate mass of matter or of feeling into an artistic whole. The conception of man as an unprofitable servant, of imperfection as a sin abhorrent in the eyes of a righteous Deity, is quite foreign to him. He looks on the wicked man as on the bad artist and despises him as one who has made so little of the raw material given him; just as we might laugh at one who had developed one arm to enormous proportions, while allowing the rest of his body to grow feeble and emaciated. Of the fierce conflict between the artist and his material which must precede the most imperfect harmonization, of the lawless might of the passions before which many a man goes down in spite of his best efforts, so that we are compelled to cry for outside assistance and to say with Luther

"Mit unserer macht ist nicht gethan,
Wir sind gar bald verloren."

Of all this Aristotle has but little idea.

But the owl of Minerva does not begin her flight till the shades of evening fall, and the philosopher whose writings express so clearly this ideal of the Greek gentleman, living at harmony with himself and with his city, was also the tutor of Alexander, whose world-wide conquests made the free life of the independent city-state no longer possible. Greek civilization fell upon evil days; the philosopher was compelled to look on the world not as a necessary part of his own life, but as external and possibly hostile; he was thus thrown back upon the study of himself, and not unnaturally became dissatisfied with what he found there. The Stoics and Epicureans did not really attempt to found complete philosophies, but rather to hit upon a working compromise which would enable man to go through life with as little inconvenience as possible. Their interest was practical rather than scientific, and this bent became intensified when the great world-wide Empire of Rome threw

over them its tremendous shadow. Never was a guide to life more needed. Man looked out on the world and shrank back in horror as he gazed on the foul dregs of expiring Paganism. Read the Epistle to the Romans and see how far Greek life and manners had preserved the winsome charm and sanity of earlier times. Over the Empire of the world ruled a Nero or a Domitian ; harlots, panders, slaves, eunuchs swayed the destiny of provinces with the population of Empires. He looked into his own heart, and still more into that of his neighbours, only to find lust and cruelty, envy and hatred, love of mere bodily and material comfort, and a flickering flame of desire for higher things which only served to render more sombre the tragedy of his own unworthiness. All seemed given over to the Prince of this world, and to his cry of "Lord, how long?" the brazen Heaven gave no reply. Philosophy proved powerless to give happiness to all save a few exalted souls; even to Marcus Aurelius it gave only a chastened sorrow. Of what avail for the average man to talk of the beauty of immutable reason, when his destiny and that of his dear ones was controlled by some vile slave, who had risen to power by arts unspeakable, or by some vile passion which laid its vast and filthy hands upon his will, and tore down the partition which separates man from the brute, leaving him at once conscious of his own infamy and powerless to avert it. "There was never yet philosopher, who could endure the toothache patiently," and worse ills than toothache, both in man and in his environment, were pressing more and more clamourously for a solution. So pitiful was the failure of philosophy that reason came at last even to doubt herself, and her last word seemed to be a barren skepticism. Men turned in despair to the life of emotion, and found therein, if not a cure for their misery, at least an anodyne. Greek and Roman religion had always been so purely formal that rites such as the Orphic and the Bacchanalian had existed from very early times, but now a mingled flood of mysticism and of sensuality poured in from the East. Sellers of charms, miracle workers, oracle mongers, more or less sincere, offered medicine to the diseased spirit. Man sought by a process of spiritual eavesdropping to look behind the ghastly phantasmagoria of the phenomenal world, and by the sweet strains of voluptuous music or by corybantic orgies to attain to the ineffable fountain head. Apuleius was an African of the second century, A. D., and in most of his work gives to life's riddle the same answer as that of Lucian, that at the back of all things sits a mocking fate with a trace of tears in his laughter ; but at the end of the "Metamorphoses" he suddenly rises to wild heights of mystical fervour.

“‘With stars and sea-winds in her raiment’ flower-crowned, shod with victorious palm, clad, under the dark splendours of her heavy pall, in shimmering white silk shot with saffron and rose like flame, an awful figure rises out of the moonlit sea.” “Lo, I appear,” she says “creator of the primal elements, first-born of the centuries, Lord of all Lords, Queen of the shades, Empress of Heaven, male and yet female, swaying by my nod the shadowless heights of Heaven, the cool salt winds of the world, and the sad and silent spaces of the dead.” (Mackail. *Latin Literature* p. 241).

To an observer like Apuleius one of the most pitiful of these thousand sects would have been that which worshipped a Jewish fanatic, who after a life of miracle mongering in an obscure province of the Empire, had been crucified by the Roman governor, and in common with other hierophants of the time, had been fabled by his disciples, half credulous and half hypocritical, to rise from the dead. But even in the time of Apuleius the Religion of Christ was beginning to tower above this mad welter of half held faiths, and by the third century it was evident that herein a new and mighty force had come into the world. Systematised by powerful and eloquent logicians and rhetoricians, gathering with one hand from Greek philosophy and Roman law, and with the other from Eastern metaphysic and fantasy, offering to the learned mental and to the vulgar emotional satisfaction, Christianity, though still persecuted, was recognized as the ruling spiritual force of the age. But sweet and tender as was the person of Christ, complete and systematic the philosophy of Paul and his successors, the true Greek felt, that in this Eastern cult there was something alien to his history and to his instincts. Christ came, *Συμπεγενὲς ἄρμα δαύκων*, “borne in an Orient car,” and at the last, out of the ashes of the Greek spirit, arose the last of the Greek philosophers and the last great attempt was made to solve along the lines of Greek thought the dread yet fascinating riddle. Plotinus, A. D. 205—270, is a personality of whom we would fain know more. A devoted student of the great sages of Greece, yet also of the self abnegation and fantastic mysticism of the Orient, he sought to unite them both in a philosophy which was also a religion, in a religion which sought to appeal at once to the mind and to the passions, in which the element of truth which these Indian and Persian orgies and asceticisms contained, was to be amply acknowledged, while yet the essence of his teaching was to be drawn from the fountain-head whence had flowed all the triumphs of the Greek race. His disciple Porphyry, who edited his works with loving care, draws for us a fascinating picture of the sage. A mystic and

an ascetic, dying at last through neglect of a sore throat, itself caused by lack of care for the body, a devoted student, eating and drinking little, and sleeping less, that he might give more time to the things of the spirit, he was yet the trusted councillor of the Emperor, a devoted friend, so keen and honorable a man of business, that he was the trustee of estates innumerable, with so shrewd a knowledge of human nature that his servants feared yet loved him, so fond of little children that the house was ever full of their joyous laughter, yet able on the instant to turn from a romp to the lofty contemplation of those high mysteries on the elucidation of which his whole soul was bent. What answer then have years of unending meditation revealed to a spirit so singularly pure and keen? At the very beginning we are met with a difficulty. Mysticism more or less avowedly rests on scepticism and Plotinus practically agrees with his contemporaries in considering reason an untrustworthy guide to the divine, inadequate to unlock the secret of life's mysteries and of human happiness. He turns away almost with contempt from the phenomenal world and the scientific knowledge which deals with it, and seeks to set up a silent sanctuary far from the din and strife of temporal things; to substitute for science, and its instrument the discursive reason, which so toilsomely adds here a little and there a little, rescuing a few fragments from chaos, like a child picking up shells on the sea-shore, that faculty, call it what you will, by which in moments of rapt contemplation, we seem to ascend into the seventh heaven, and to become at once and with no interposing medium spectators of all time and of all existence. He yearns to take the Kingdom of Heaven by violence, by means of some other organ than reason, by methods which can indeed not be spoken of, for speech is the vehicle of reason, and this organ must be an *ἐξορτασις*, a standing out of one's own nature, and a reception of the divine by direct immediate inbreathing of its inmost essence. In moments of rapt trance, when the soul by emptying itself seems for the moment to find itself in God, the mystic realizes his ideal. But to attempt to describe this supra-rational union with God in terms of the rational, is a contradiction which in the end makes it impossible to base on it any consistent philosophy.

The ideal of all his striving, *ἐνωθῆναι καὶ πελάσαι τῷ ἐπὶ πάνσι θεῷ*, "to come near unto and to be made one with him that is God over all," an ideal which he realized four times in his own life in moments of unspeakable exaltation, is a consummation of which he can tell us nothing. The soul empties itself of all that is carnal, and receives from outside an inspiration of whose origin it is ignor-

ant. Thus, Neoplatonism is obviously, as Harnack points out, a philosophy of revelation; that is, it is not a philosophy at all, but a religion, or in other words, from the strictly philosophic point of view, a sublime begging of the question. The reply of the Neoplatonist is that the revelation is one from God to that spark of the God-like in man, which alone gives man any reality,—for God is all and in all,—and that we know the truth of His revelation by an inner certitude far superior to any logical proof. The extent to which this reply can be admitted will be better seen after a more detailed statement of his metaphysic.

In the beginning was and is the Eternal:—Primal Being: at once all and nothing, indeterminate, unapproachable, unknowable, and yet the source and parent of all. From this by a process of emanation proceeds *Noûς*. To say that a thing emanates from another is really to say that it proceeds from it we do not very well know how, for all through Plotinus is hampered by his inability to express the inexpressible, to put forth through the medium of the discursive reason that which he has apprehended as an unmediated ecstasy. This *Noûς* is at once, as its perfect image, exactly similar to the Primal Being, and as derived from it totally inferior; it is at once thought and its object; reason, and that which reason contemplates; perfect, yet less perfect than its unknowable parent. *Noûς* produces the soul, the medium between itself and the phenomenal world, permeated by and illumined by *Noûς*, yet in contact with the phenomenal. There is but one soul, the great *anima mundi*, pulsating through the universe. Of it the soul of the individual is a part, yet in it our individuality is not lost; part of the world's soul, our soul is yet capable of aberration from it, and we must strive to bring it back to its true nature, to make our soul and the world's soul once more concentric; all of which is simply another way of saying that Plotinus was unable to explain how man is at once one with God and alienated from him. The soul has being, but is in motion, which Plotinus, like Aristotle, regards as an imperfection, because implying transience and instability; the highest being, as the highest reason, being that which energises and yet is motionless, the self-centred activity of creative contemplation. This moving essence the soul generates the world, which as an image of the soul has reality, and as governed by the eternal Idea of good is itself fair and good; for Plotinus, like Plato, has a keen sense of the grace and beauty of the physical world, and would fain be no dualist. It is characteristic that of all Plato's writings he was most strongly attracted by the "Symposium," where in language so

perfect that to the crystal clearness of the thought is added a mysterious charm as of sweet music heard at eventide over quiet waters, Plato strives to show how we may gradually rise from the beauty of earth to the beauty of heaven, from the beauty revealed to the senses to the beauty of holiness, with whose contemplation God Himself is well pleased. At first, he says, we love some actual human being, some fair boy or girl; then we gradually come to love all fair beings because of their likeness to the loved one, till at last love for the one seems a narrow and paltry thought; then rising to a perception of the unchangeable laws which give their beauty to these sensuous forms we soar to conceptions higher and more general, till at last we stand full on the shore of the infinite ocean of beauty, and look through the forms of sense till in them we see the very Godhead manifest; for beauty is less hampered than any of the other great ideas by the necessity of manifesting itself through an earthly medium. But just as Plato in his struggle after righteousness was forced to give up much of his Hellenic love of beauty and in his later life to become almost an ascetic, so Plotinus in his attempt to account for the entrance of strife and error into human life, is forced to fling the phenomenal overboard, or rather, becomes inconsistent because he will not do so. Through the substratum of matter on which the phenomenal reposes and out of which it is formed, strife and illusion enter, and though as capable of form matter is neutral, yet as destitute of form and idea it is evil. Again the world-old question arises: How does the neutral become evil? For the dualism between flesh and spirit has never really been transcended by philosophy, though it is to the credit of Plotinus that he saw that the least adequate solution of all is that which declares the contradiction insoluble. He was too much a Hellene to consider all the phenomenal as nothing but mere *Maia*, Illusion; to boldly declare that there is no phenomenal is a height of consistency and of folly which I think no mere Occidental has reached.

There is at least a medium through which the spirit can reveal itself, and to which spirit is therefore akin, which can be wrought up till even physical nakedness becomes spiritual beauty, yet which is also capable of being wrought up into that which is hostile to spirit. Nay, the very spirit itself may become a captive, dragged at the chariot wheels of sin, so that the revealer of the divine becomes "Procuress to the Lords of Hell." The dualism remains unsolved; in the second part of his Philosophy Plotinus shows his true leaning, for it is a long and carefully reasoned attempt to construct a path back from the physical to the primal recesses of the

unknown. Existence he figures as a series of concentric circles ;— Being, the soul, the phenomenal,—and perfection as attained by the gradual concentration of self till we attain to and become one with the highest. Virtue clears the soul of the muddy vesture of decay which surrounds and defiles it, till at last, pure from all earthly taint, our expectant spirits receive the revelation which we know to be true by a certitude which words can neither increase nor take away. Yet pent here in the grave-clothes of the flesh, wedded to "this earthly body and grievous growth of clay," only at death can our souls fly away, and enjoy in endless fruition that bliss which before was theirs only in transient moments. The great oracle which Delphi gave to his pupil Amelius in response to his question, "where is now the soul of Plotinus?" paints vividly the rapture of the soul now freed from the finite and plunged forever in the illimitable All, and is doubly interesting on account of its very inconsistency, merging the identity of the soul in the boundless ocean of eternity, yet unable to accept the vague impersonal Pantheism of the East, and clinging with the old Hellenic fervour to the belief that somehow, somewhere, unlimited and yet distinct, changed and yet the same, there still persists the self-conscious personality of the sage.

It is impossible in this brief sketch to do justice to Plotinus; he himself was unable to do full justice to the great truth which he has grasped. The reality of righteousness, and the nothingness of all else; the ineffable superiority and certitude of those "high instincts, before which our mortal nature doth tremble like a guilty thing surprised." These are facts, but the moment that we try to explain them, or to collate them with that other undoubted fact that we have a mortal nature, whose tremblings are real, and are due to its sense of guilt, we fall into contradictions. Plotinus is the type of those tender souls, who, sick of the eternal see-saw in which ratiocination begins and in which it ends, seek to solve the contradiction by disregarding it, and to find truth by throwing themselves on the bosom of an eternal, which alas! when they attempt to prove its existence, retreats further and further into the unknown. Mysticism is bound to be common where the old ideas are struggling with masses of new knowledge; in this form it is often the product of imperfect thought, and merely means that we are too lazy to attempt to reconcile contradictory concepts, and take refuge in an emotional debauch. For there are two kinds of ecstasy—the ecstasy of the senses and the ecstasy of the spirit. The former is common and can be produced in various ways. Sometimes it is the result of a dis-

eased nervous system; great hunger, nervous excitement, tend to produce it; we see it in the Indian fakir, and in the American camp-meeting; and as students of the latter know, it is closely allied to, and tends by reaction to pass into frenzied outbursts of sensuality, a phenomenon which explains some of the curious features of Greek religion, especially at Corinth. But there is the higher ecstasy of the spirit, which consists not in its abnegation but in its sublimation, so that the soul of man, whether in the body or out of the body he cannot tell, is caught up to the third heaven and there beholds, not the physical visions which are told of by so-called mystics, but in all their transparency the mysteries of life and death, the moral laws which regulate our being. This is the ecstasy of the higher mystics, of Plato, of Saint Paul, of Plotinus. It is no bad thing for a man to be carried beyond himself; it all depends upon where he is carried. And yet again the contradiction returns; for we can only express this revelation of the Eternal under forms of the concrete, and so are compelled to bring in again the same evil world from which our vision beatific had momentarily set us free. Thus Neoplatonism tended inevitably to degenerate, and in its later developments became merely a series of rules by which trances and various forms of demoniac possession could be produced. Even in Plotinus we see this element. In the attempt to convert his philosophy into a universal religion, he was driven to say that the Primal Unknowable could reveal itself in various ways; the stars were gods; the customs and traditions common to all religions are revelations of Him; especially those of the ancient East, so saturated and drunken with the divine; and so by easy stages the most exclusive of all philosophies became the easy justification of every sect and fantastic belief which it had entered into the heart of man to conceive.

Yet Neoplatonism, if not a consistent philosophy, is at least a noble failure, a grasping after things not seen but only felt, and felt as not wholly intellectual. It proclaims that man shall not live by Knowledge alone; it fails because it seeks to prove to and by reason that only the supra-rational is the real. It enters the Kingdom of Heaven by force of ecstatic intuition, and then seeks to explain by speech those high mysteries before which only silence is consistent.

To the name of the last of the great Greek philosophers I have joined that of an obscure poet of Alexandria, of whom we know nothing save what is told us in about one hundred and fifty epigrams, totalling in all about 1,000 lines, which he contributed to the Anthology, that great collection of the fugitive poems of Greece

which extends over twelve centuries, and forms so complete an epitome of the rise, maturity, and decay of the race. Curiously enough, he was the friend of Hypatia, the beautiful Neoplatonist of Alexandria, with whose sad fate Kingsley's novel has made us all familiar. Her name alone stirs him to any degree of enthusiasm. "When I see thee, Hypatia, the day seems fair; apart from thee, the sun is overcast." "I see thee, maiden, I worship thee and thy discourses, seeing that thy home is with the stars. For thy daily practice is with heaven, holy Hypatia, beauty of language, pure star of philosophy." But there is a deeper connection than this between Palladas and the Neoplatonist, and I have linked their names because he sums up very typically the other solution of the problem at which we can arrive from the standpoint of scepticism, a solution moreover, which has been revived and expounded in our own day with extraordinary force and earnestness by no less a poet than Swinburne, the attempt to reconcile the jarring elements of life by declaring not flesh but spirit to be unreal, the attempt to attain the divine by the road not of the spirit but of the senses. I have been much hampered by my inability either to make or to obtain suitable translations of his epigrams. J. A. Symonds has rendered a few not inadequately, and Professor Glover, in his recent interesting book on "Life and Letters in the Fourth Century" has a number, which though graceful, lack that accent of savage sincerity which lifts Palladas above the crowd of contemporary versifiers. Whatever his defects, he was bitterly in earnest, and this fact kindles his verse, if not to the pure flame of the highest poetry, yet to a dull, red glow of fury which is almost equally rare and remarkable. For him the worship of the senses is a religion, a striving after the ideal, an attempt to gain the Kingdom of Heaven by violence. Like mysticism, this melancholy creed arises in times when the occupations of the outward world fail to satisfy, and when the soul is cast back upon itself. The processes of reason are too slow, and besides, what can the soul find of reasonable in the wild welter of sin and chaotic desire which confuses the outer world, in that mass of mingled turpitude and ineptitude which makes up the life of the average man. The wicked are set in high places, and the fool is held in honor; the poor man by his wisdom saves the city and no man regards that same poor man. Our rulers are fools, running after things of no import, or are corrupt and turned resolutely to do evil. Nor is there any hope in heaven. "We mortals are a herd of swine," says Palladas, "fed and killed by the gods in their sport." "Naked came I into the world" he says, in words which seem to

imply a knowledge of the Scriptures, "and naked go I out of it, and why do I labor in vain, seeing the naked end?" We heap up riches and the grave-clothes cling all too tight to enable us to conceal much of it in their folds. Palladas may perhaps be accused of over-drawing the picture. He had to make his living by teaching Greek, and he was married to a shrew. But the picture is the same in all ages. "For we are all," says Luther, "both in body and in outward possessions, under the power of the devil, whose guests in this world we are; for he is the prince and the god of it. And thus the bread that we eat, and all that we drink, the clothes we wear, yea, the air, and all that makes up our material life, are subjects to his rule." But Luther found a consolation denied to the disconsolate Hellene, for whom scepticism, parent alike of mysticism and of the life of the senses, has destroyed his belief in God. Is nothing then real? Is there nothing but a confused evanescent flux, man rising out of the unknown, living for a few brief minutes of sorrow and sleep and pain, and then passing into the other unknown. In the attempt to get his feet on more solid ground, he falls back upon the primary emotions, the crude animal passions, certainly the groundwork and raw material of all our life, and in these, if anywhere, finds reality. These are simple and immediate; here, if only for the moment, I realise myself and find expression. My reason and thought, previously only God-given torments, are now at least stupefied and still.

Be merry, friends; forget the score,
 That all men owe to nature.
 Why life's uncertain term deplore?
 Death comes to every creature.
 But knowing this life's passing swift,
 Cast all such care behind thee;
 Accept the wine-god's bounteous gift
 And sweet oblivion find thee:
 Nor scorn delights the Paphian gives,
 Seek joy in love and beauty.
 Let other business of our lives,
 Be careless fortune's duty.

We all know the man who takes to an evil life because he is compounded of weak will, strong passion and very defective perception as to the moral value of any action, more especially his own. But there is also the man who more or less deliberately sets up the life of the senses as a substitute for religion, even though he may grant you that realisation through such a medium is only a counsel

of despair. Such men are common in every old, still more in every decaying civilisation, in France and England, still more in ancient Greece, nor are they all men of ignoble natures, though the twin sister, Mysticism, more often wins their somewhat confused affections. In the case of Palladas this solution is rendered more natural by the thought that in this first, free, natural expression of passion the early Greeks, those glorious Hellenes, to whose frank unconscious sanity we look back so wistfully, did find satisfaction; whereas with the incoming of Christianity all this frank, free life passed away. Glowing Aphrodite, so full of life and lust and laughter, with the warm, rich blood flowing so riotously in her veins; the young Apollo, incarnation of Hellenic grace and strength and beauty, who knew not age, nor sorrow, nor pain, had given place to the "pale Galilaean," with no beauty that we should desire him, his worn and wasted flesh torn by the disfiguring nails; and to the joyless Mother-Maid, her eyelids red with weeping. The old religion, in which the gods manifested themselves in forms of sense, when loving maid and rapturous lover gave to passion that which was her due, while yet all was tempered by the finest grace, the most exquisite praise, passed away; and there appeared the narrowing self-restraint, the joyless acidulous purity of modern life. The old stars have sunk below the horizon, and no new stars appear, however faint and far, to guide us over the trackless sea. "Alas for the fate of us who hold the old Greek ways!" he says, in words that are an anticipation of Clough; "Ah, well-a-day, for we are souls bereaved; of all the creatures under heaven's wide scope we are most hopeless who had once most hope, and most beliefless who had most believed." Such men forget that you cannot return to an outworn ideal: that what satisfied the unconscious eupeptic son of Attica will not satisfy the conscious, slightly bilious son of modern Alexandria or England. In spite of our best efforts to set back the clock our own century holds us fast; to consciously go back to the age of unconsciousness is an impossibility; the grown man cannot for longer than a moment find full delight in the woollen puppets and wooden bricks which charmed his childhood. New elements, chief among them the consciousness of this need for satisfaction, and of the inability of our ordinary life to satisfy it, have arisen; but it was just his complete contentment with the ordinary life that characterized the Greek of the Athenian age of Faith, and after a moment's successour worship of the senses proves inadequate. Then comes discontent, not with our own theory, but with our Maker, who has put us here, saying "Joy is not, but love of joy shall be."

Or perhaps, like the melancholy Jacques, we take refuge for a time in the centre of indifference, and feel that this also is vanity. "With hope and chance I have now no more to do," says Palladas; "Henceforth I reckon not of their deceits; I have reached haven."

"All Life's a scene, a jest; then learn to joke,
Forgetting all your ills, or—bear the yoke."

"Our life's a slave that runs away,
And Fortune but a courtesan;
We needs must laugh to see them play,
Or else must weep to mark alway
The worthless is the happier man."

But the strife was too intense for him to remain long in this false equipoise. Again he flies for satisfaction to new delights of sense, in lower and coarser forms, only to find in them a deeper nausea and a deeper shame. And so the weary cycle goes on, till he ends in a frenzy of despair, felt as bitterly and expressed as nakedly as that of Dean Swift, and gives us his theory of the origin and descent of man in words which I would like to quote but dare not.

Thus the Greek ideal wrought out its own destruction; it had come upon the problem of evil, and shattered itself in the vain attempt to explain the contradiction. For the last word of ancient philosophy is Dualism, and yet in Dualism the human soul can never rest; and though Mysticism is tenable only as a resting-place, and Materialism not tenable at all, out of the Orient there came at last not a philosophy, but a life. In the perfect man, of whom Plotinus dreamed, and Palladas despaired, the contradiction is not so much solved as transcended. "The Prince of this world cometh," said Christ, "and hath nothing in me."

W. L. GRANT.

THE CHANCELLOR'S ADDRESS TO THE UNIVERSITY COUNCIL.

The following address was delivered by the Chancellor, Sir Sandford Fleming, at a meeting of the University Council held the 9th day of February last, for the purpose of welcoming Dr. Gordon as the Principal of Queen's:—

Members of the University Council:

"This is the first occasion since the appointment of Rev. Dr. Gordon as Principal, that he has met the University Council. It seems to me, therefore, most fitting that we should review the progress we have made in recent years and consider our present position.

"In the year 1879 I had the great satisfaction of taking my place at the Board of Trustees with Dr. Gordon. During the greater part of the intervening twenty-four years he has been removed to parts of Canada at a distance from Kingston, while it has been my own greater happiness to have been more closely identified with the University than when we were associated as trustees. In these twenty-four years the students in attendance have increased in number nearly five fold.

"It is a matter of great gratification to the University Council to welcome here once more our old friend and former trustee. It is especially gratifying to receive Dr. Gordon as the executive head of the University. In 1879 Queen's had turned over the first page in her history. That page had been marked by many discouragements and vicissitudes, but the new page then opening has been characterized by marked progress and brilliancy. Before 1879 we had really no college buildings except the one which has since been enlarged for the use of the medical faculty. In May of that year we had the distinguished privilege of having the foundation stones of our first Arts buildings laid by the representative in Canada of our late most gracious Queen, and by Her Majesty's illustrious daughter, the Princess Louise. On that occasion too, we had the assurance of the genuine friendship and co-operation of the people of Kingston, as the then new Arts building, still an imposing structure, was erected by the liberality of the residents of the city. It is a noteworthy fact that the affection of the citizens of Kingston has never faltered, but has increased with every passing year. It is indeed a proud distinction which Queen's can justly claim that she rests on the support and affection of friends and benefactors, not only in Kingston but throughout the Dominion.

"In the first Arts building opened in October, 1880, a reasonable development of the University was contemplated, but no one at that

date anticipated that in less than twenty years it would be absolutely inadequate for the extraordinary increase in students. When that building was ready for occupation the total number of students in every faculty was one hundred and seventy all told. To-day they number no less than eight hundred and forty, showing a remarkable numerical increase.

"The expansion has been an all round expansion, which unmistakably indicates the health, vigor, and vitality of this seat of learning. The University has not failed to grow in any direction. The large group of buildings which we see around us gives the best external expression of this growth, and, in some respects, its actual measure.

"The increase in the Faculties, its Professoriate, and its students, is the internal growth which necessitated the outward increase of accommodation.

"For twenty years preceding 1879 the University had barely held its own. Since that year it has advanced by leaps and bounds. In 1880 the first fruits of Principal Grant's heroic labours appeared in the *then* new Arts building.

"In 1884 the testing time came. Then arose the agitation for federation with Toronto University. Had she not then felt the new life strong within her, the results might have been otherwise. It was a critical question for Queen's, and felt to be so. But the decision was soon taken, so characteristically expressed by Principal Grant in the saying that "Queen's roots were in the ground, not in the air," and that she would stay where she had first taken root.

"The question was submitted to the graduates and friends, and with almost absolute unanimity they said with the Principal "that to move her would be to sever Queen's from traditions, associations and affections, the very source of her growth and life."

"It was felt then as it is felt now, that there is a pressing need for such a university in Eastern Ontario, and that the removal of Queen's would be a deep injury to the cause of higher education in the Province. The wisdom of this decision has been fully vindicated.

"No one would now contend that Ontario would be better off had Queen's been absorbed by Toronto twenty years ago. Having elected to stay at Kingston, she must needs progress, and the next development of Queen's was on the Science side.

"Public spirited men from all parts of Eastern Ontario urged the Government to establish a Science School at Kingston in connection with Queen's, and Sir Oliver Mowat, then Premier, after careful consideration, determined to yield to the request, provided a corporation was organized for the purpose, and a sufficient amount of money

raised to guarantee the success of the enterprise. The result of these efforts is witnessed to-day in the School of Mines, Agriculture and Forestry.

"In 1892 the University Council brought to a successful issue negotiations for affiliating the Royal College of Physicians and Surgeons. That college became the Medical faculty of Queen's, with one hundred and twenty-five students. The present number is two hundred and three. That is to say, the students in attendance have nearly doubled.

"In 1894 Prof. Dupuis brought before the University Council and the Board of Trustees a scheme for the establishment of a Faculty of Science.

"The scheme was favourably viewed by the late Principal, who reported that the time had come when Queen's should organize such a Faculty to give theoretical, and, as far as possible, a practical education also, in the various branches of Applied Science. It had been pressed on his attention by students and benefactors at different times in various parts of the country. He saw that there was an increasing demand for such education, and bequests from the late Mr. Roberts and Mr. Doran rendered it possible to begin such a Faculty, so important in our age and in every new country.

"The senate prepared a syllabus and the council passed a resolution unanimously adopting the scheme. Immediate action was thereupon taken and the result has more than justified the wisdom of the scheme and the confidence reposed in Professor Dupuis.

"Such in a few brief words is the story of the progress of the University, and whilst the body corporate has been growing and expanding, the spirit has not slumbered. The men who founded Queen's were endowed with breadth of mind. They were representative sons of Scotland, loyal to the State, loyal to education, and loyal to their church, too, but free from all spirit of intolerance. In founding a university they must not divorce education from religion—it would have been contrary to their traditions to do so, but neither did they desire a denominational institution. The Royal Charter truly expresses their purpose in these words: "the establishment of a college in connection with the Church of Scotland for the education of youth in the principles of Christian religion and for their instruction in the various branches of science and literature." That there is nothing of a sectarian or denominational character designed is made manifest in the further words, coming as from the lips of Her Majesty the Queen: "We do further will, ordain and appoint that no religious test or qualification shall be required of, or appointed for, any persons admitted or matriculated as scholars within our said college."

"The founders, and the men who have shaped the history of Queen's had in their minds an ideal university; they had before them as models the great Scottish Universities which are national, not denominational. This spirit always prevailed. In 1874 the desire had grown for broadening the constitution of the University. At that date the University Council was created by the wisdom and sagacity of Principal Snodgrass and Professor McKerras, in consultation with the Board of Trustees. In this Council, graduates of all creeds and denominations have regularly met and deliberated respecting every matter affecting the welfare of the University, and it may with truth be said that all the most important advances of the last twenty-five years have been either originated or promoted by the Council. Thus it is obvious that the broad spirit inherited from the founders has permeated the whole body and may be taken to explain the marvellous vitality and growth of this seat of learning. This liberal spirit was again manifested in 1889 when the Parliament of Canada was asked to broaden our constitution with the view of increasing the efficiency, and extending the usefulness, of the University. An act was then passed enabling the University Council to elect from amongst their numbers five members to sit in the Board of Trustees, irrespective of creed. These members represent the whole body of graduates.

"The University has reached a position where the interests committed to her extend far beyond the bounds of the Presbyterian Church. This was recognized from the first as implicitly inherent in her constitution when her charter stated that her education must be open to all, irrespective of creed. It was inevitable that the University was designed to be free and open, and that the students were to be under the best influence of eminent professors. This condition of things the Church recognized in 1875, when at the union of the different branches of the Presbyterian Church the position was taken that Queen's was an institution extending beyond the sphere of the Church.

"This condition has become more and more manifest, and has been fully recognized by the Church and the country.

"It is this continued growth and expansion which make it imperatively necessary that the frame of the constitution should be properly adjusted to the actual facts.

"This does not suggest or imply that there shall be any break in the friendly relations which exist between the University and its mother Church. That is a relation which cannot be broken. The historical and traditional connection must always remain—and continue to influence most deeply the destinies of Queen's.

"In the broadening process that has gone on, there has not been any severing of old ties or affiliations. The enlargement of the constituency has meant the gaining of new friends, not the dropping of old ones. Each step taken has had the approval of the Alumni and benefactors, including the mother Church, the greatest benefactor of all.

"When it was proposed to make the change in the constitution which had separated the University from its historic connection with the Presbyterian Church, the first step taken was to consult the Church itself, and the answer given by the Church is recorded in the minutes of the General Assembly held at Halifax in the year 1900. It expresses approval of any well considered change in the constitution of the University which would still further increase its public usefulness by making the body of Trustees most completely representative of the undenominational character of the work to be undertaken.

"A meeting was then called of the Corporators, Trustees, Senate, Council, Graduates, Alumni and benefactors of the University, which was held at Kingston in November, 1900. At that meeting the matter was fully discussed, and finally, after prolonged deliberation, extending over two days, it was unanimously resolved to proceed with the contemplated constitutional changes in order to effect the more complete nationalization of the University. The minute embodying the result of that convention sets forth that the growth of the University has been marked by the cordial support and encouragement of men of all shades of religious opinion, by a constant increase in the number of students and graduates who were not Presbyterians, by the University becoming an integral part of the educational system of the Province, and the conclusion reached is, that in the judgment of that convention the Governing Board of the University should be undenominational and should be in a larger degree than at present directly representative of the graduates and friends of the University.

"The General Assembly committee met the trustees in Knox College, Toronto, on December 6th, 1900, and after full consideration approved of the proposed changes. This committee met in this building on the 29th and 30th of April last, and made further progress in perfecting the details of the scheme which had been outlined by Principal Grant, to give effect to unanimous wishes of the University constituency. At this stage matters still stand. The report of that committee may be found in the minutes of the General Assembly of 1902.

"What is taking place in Queen's is the historical repetition of that which for centuries has been going on in Europe. The Universities of Europe with scarcely an exception began their life under the

motherhood of the Church, and in process of time outgrew their early constitution. We have seen the process taking place in our own day, in Oxford and Cambridge, when they were, for the first time, freed from religious tests. Again, we find in Scotland three great universities which were founded three or four centuries ago by the Roman Pontiff. These seats of learning adjusted themselves to new conditions which time had wrought. So Queen's, as a living organism, the gift of the Presbyterian Church to the Canadian people, carries with it the power of readjustment and adaptation to ever-changing conditions in national life.

"In receiving our new Principal, I extend to him, on behalf of the University Council, the most cordial greetings. On his return, after many years, he will find the whole atmosphere of Queen's undiminished in hope and enthusiasm. He will find an increased determination, if it be possible, to open wide the doors to all creeds and classes. He will see that no university in the land can be more truly national in her spirit, in her work, and in her aims. Our legal constitution in process of development will be moulded to meet new conditions, but whatever form it may assume, I feel satisfied that the public will never forget the debt of gratitude which they owe to the founders, and still more to the church by which it has for long years been fostered, and by which it is dedicated in its matured condition to the high purpose of educating the youth of Canada.

"Accept my hand, Principal Gordon, in token of the great satisfaction this council has in having you with us."

THE FUNCTIONS OF A MODERN UNIVERSITY.

(AN ADDRESS BY PRINCIPAL GORDON TO THE UNIVERSITY COUNCIL
OF QUEEN'S.)

Mr. Chancellor and Members of the University Council:

"I am grateful for this opportunity of addressing you and of coming into closer touch with you in regard to matters affecting the work and welfare of the University. I came at your call and, had it not been for my confidence in your sympathy and support, I could not thus have answered your request, for I came to take up work laid down by him who gave unstintedly his splendid powers to make Queen's what it is to-day. I need not try to picture him to you, for you all knew him and you can never forget him; brilliant, versatile, fearless, indefatigable, strong and ready to help, spending himself without measure for the cause or the person he befriended.

 "One who never turned his back but marched breast forward,
 Never doubted clouds would break,
 Never dreamed, though right were worsted, wrong would
 triumph,
 Held we fall to rise, are baffled to fight better,
 Sleep to wake."

"My supreme encouragement in accepting the office vacated by my life-long friend is found in God's promise to Joshua, when calling him to succeed the great lost leader, "As I was with Moses, so will I be with thee."

"Since my first acquaintance with this University, it has lengthened its cords and strengthened its stakes beyond all our early expectations. Its life has become more complex, its agencies and influences more varied and extensive. It has greatly developed its power to impart that general culture for which a university should always stand; and it has largely increased its facilities for providing the special and technical instruction demanded of an efficient modern university. Along both of these lines Queen's has cherished lofty ideals and has tried to be true to them.

"What do we expect of a university? On the one hand the university takes young men and professes to direct them along such lines of study as shall call forth and strengthen their faculties, quicken their capacity for service, acquaint them with the ripest thoughts of the best thinkers, enrich them with lofty ideals, broaden their views and their sympathies, and enable them to act in the interests of life in more correct relations. A man's life consists not in the abundance of that which he has, but rather in the abundance of that which he is,

and in all education the development of the man himself is the essential matter. Wisdom is to be valued, not merely as a means to an end, but for its own sake, apart from any wealth or fame or worldly comfort that it may enable a man to win. He is a rich man who can truthfully say: "My mind to me a kingdom is." Looking upon the young man who spends the strength and efforts of years in acquiring scholarship that may have no immediate money value, some are inclined to ask, "To what purpose this waste?" But the outlay is not waste if it enables him, with cultured taste and with a broad, liberal intelligence, to hold converse with the great minds of ancient and modern times; not waste if it has so built up his being that he can take a wider outlook upon the world, can see more of the meaning of life, can realize his kinship with the loftier spirits of his race.

"That is one function, one purpose, one ideal of the university. Yet not the only one, for a man's life consists not merely in the abundance of that which he is, but also in the abundance of that which he can do; and so the university, more especially in our modern conception of it, seeks to qualify many of its students directly for their life-work by the technical schools in which, along various lines, special training is provided for them. The efforts in this direction were formerly restricted to what were called the learned professions—law, medicine and divinity. But learning, scholarship, intellectual effort and attainment are not confined to these callings. They are required in many other fields of activity, and the university tries to meet this demand. Along the many lines of applied science, technical schools are being equipped. The engineer is as thoroughly trained as the physician. And there is no special limit to be set for such schools, no select circle of intellectual or professional activity to which the privilege of special training should be restricted. Chemistry is as important in agriculture and in manufacturing as in medicine. A scientific training may be as helpful in forestry as in engineering. Science is democratic, not exclusive, and the vast increase of scientific studies conducted in these later years in well-equipped universities has widened the bounds of university life, and has increased its value to the nation.

"The university itself has profited by this extension of effort, this reaching forth to meet the wants of those who along different lines of work require a scientific training, because the technical school, by constantly directing its aim along practical lines, has in some degree compelled the University to measure its work by new tests, to apply new standards of value to lines of study. At the same time, the technical school gains greatly by having its students brought in contact with the general culture of the University, for they thus learn that

utility is not the only test of value, that the so-called practical studies may tend to narrow the man who ignores the claims of history and philosophy, of literature and art, and that, indeed, all studies are practical which enrich the life of the community.

There is, no doubt, the tendency on the part of the student to rush quickly into the technical school, ignoring that wide University course which aims at general culture rather than at special instruction. In many cases this may be due to the pressure of circumstances, to the need of quickly reaching a position of self-support, but a general University training is of serious importance for all who can secure it. Ask the foremost men in any profession—law, medicine, engineering—and they will tell you that the chief need is for the man of large views, well-trained judgment, capacity to initiate new movement, with that wider outlook that comes from general culture rather than from any special training. In every department there is the need of educated leadership. No doubt men must specialize if they would succeed, but the danger in all technical education is that we specialize too soon, and so become narrow and weak. It is one thing to bring a broad grasp and wide vision to a focus on some special subject of enquiry, but quite a different and altogether poorer thing simply to hold and see that special object without the capacity to take a wider grasp, or the knowledge that there are any other possible points of view. Even in training men for special work, the university seeks to make them all the better specialists by making them something more than specialists. It aims at providing a group of influences that shall act upon the student in such a way as to call forth and strengthen his faculties, uplift his ideals, broaden his horizon, enlarge his range of vision, bring him in touch with the best of human achievement. Doubtless a young man may have this done for him without entering a university. Intimate intercourse with some great men, some strong outstanding personality may do it. Garfield is reported to have said that Mark Hopkins at one end of a log and he himself at the other was all the college he required. Those of us who had the privilege in our university course at Glasgow of enjoying the friendship of Dr. Norman McLeod frequently felt that he was more to us than the whole college faculty. At the same time, there are few great men, and they are within the reach of only a very small number of students. But the university comes in to be, in its united influence, like some outstanding personality affecting the life of those whom it reaches, opening their vision, quickening their efforts, building them up in mental and moral vigour, touching their life to finer issues.

"Now, in trying to prescribe the course of studies to be pursued by those who seek its guidance, the university is constantly exposed to criticism. Some would reject all classical training as antiquated, contending that sufficient allowance had not been made for modern scientific studies, and that, even with the great variety of options now open to the student, the curriculum is still encumbered with some unprofitable subjects. But let us not too hurriedly cast aside the course of training that for centuries prevailed when the ancient classics, philosophy and mathematics were considered the essentials of a liberal education. It may certainly be claimed for each of these departments of study that it tends to develop the student, to train his judgment, to enlarge his intellectual capacity.

"The study of the classics may not be of great importance as a mere source of information, since most of the great works of Greek and Roman genius that are known to us are accessible in the form of translations, and the knowledge of these languages is less necessary to-day than formerly, as books are now so rarely written in them. The growth of modern literature has changed the relative value of the classics, but still it is well worth our while to know something of those remnants of ancient literature that have survived through so many centuries. Our modern thought and life have been greatly affected by them. The study of them tends to make us respectful towards the past. It is essential, too, if we would perfectly know our own language, and even the best translation fails to express the full meaning of Greek and Roman writers, just as the plaster cast, however helpful, fails to fill the place of the original marble statue. Indeed, the study of the classics has, for purposes of mental training, a peculiar value. No two languages absolutely correspond in vocabulary or in construction. It is, therefore, impossible to render expressions and idioms of one with perfect accuracy in terms of another. We may reach a close approximation, but never a complete equation. Yet this very fact, with the consequent effort to get the best possible rendering, may make this department of study a helpful training for dealing with many of life's practical problems, where we must often accept and act upon a fair approximation, unable to get a complete solution.

"The value of philosophical studies, of logic, psychology, metaphysics, none would be inclined to call in question. The study of the mind itself, the investigation of the powers and processes of thought, the examination of the very faculties by which we do examine things and become acquainted with ourselves, the outer world and God, this, with the many problems and obstinate questionings which it implies, is a department of study so manifestly important as to need no

advocacy. Whatever be the information we may gather from it, or the conclusions to which we may be led, we may admit with Sir William Hamilton that it is fitted to show us at once our weakness and our worth, and be the discipline alike of humility and hope.

"As to the value of mathematical studies, this may be even more quickly recognized, and more generally admitted, for these not only furnish tools for work in fields of science, but they possess a special value in mental discipline: they train the student to accuracy of thought, leading him to seek for clear conceptions, to make sure of what he does know, and not to rest content with shadowy or uncertain fancies. So, too, the value of history and of English literature in a liberal education will pass unquestioned.

"But, however much may be said for this old familiar circle of subjects, we cannot regard it to-day as the necessary course for a liberal education. Other subjects have forced their way to recognition, possessing high value not merely for the direct results they yield but also for the mental and moral discipline they furnish. This merit is claimed not only for such studies as political economy, but for the whole round of the physical sciences. In the study, for instance, of chemistry, biology, mineralogy, and kindred subjects, you are not only reaching results that may have a direct bearing upon material progress and upon the increase of wealth and of general comfort, but you are engaging in work of a high educative value. To pursue those studies successfully demands and develops accurate observation, patient investigation, careful induction, with loyalty to truth, freedom from prejudice, and faith in the ultimate issue of honest inquiry. All scientific study of nature is, to use Kepler's devout expression, "Thinking God's thoughts after him," and faith in the uniformity of law, which is the presupposition of scientific inquiry, is really incipient faith in a moral order of the universe.

"Our modern modes of thought and life tend more and more to emphasize the sciences, and thus the boundaries of university education have of necessity been widened, until we are perplexed by the number and variety of subjects. Amid such variety selection must be made, for, however eager a student might be to annex all possible realms of knowledge, the function and purpose of university training is not to store him with every kind of information, but to direct him in such studies as shall most surely tend to develop the man himself. Here, of course, a large freedom must be allowed to the student, and a fair list of options is offered him, but to some extent the university must choose for him before he shall choose for himself, and in choosing, in arranging the courses of studies, the university must have regard to general culture before passing to lines of special training.

"Alike in the matter of general culture and in that of technical training, the university can never reach the limit beyond which no change or expansion will be called for. Here as elsewhere there is for us no finality, no point where we may say, "Let us rest and be thankful."

"New occasions teach new duties; time makes ancient good uncouth; "They must upward still and onward, who would keep abreast of truth."

"I need not emphasize what is known to every member of the Council, that this has always been the policy of Queen's. The effort has been to give the student the wider outlook, the larger sympathy, the loftier ideals of general culture, before he turns to the technical training of his own particular calling, for the man is greater than the professional. Even if he be unable to take the full Arts course, his special duties may be so arranged that they shall not be merely technical—what a member of our staff calls "virulently scientific"—but they shall combine, in some degree, broad, general culture with technical education.

"Now, along both these lines a living university must be ready from time to time to make room for change and growth. Our idea of the subjects most essential for general culture, of the studies best suited to develop a young man's mental and moral faculties before he specializes in any direction, must be kept open for revision and enlargement. We cannot afford to bind ourselves to any stereotyped course. However great the wisdom of the past, however excellent and well chosen the lines laid down by the fathers for our guidance, yet "the thoughts of men are widened by the process of the suns." We come to recognize the value for general culture of new departments that have been opened up, as has already been the case with the physical sciences. Or, it may be, we come to lay fresh emphasis on studies once familiar that have been dropped out of sight. It seems very strange, for instance, that in a Christian land, where almost the entire population profess the Christian faith, and where, with scarcely a dissentient voice, the leaders in every line of social, commercial and political progress regard the Christian Scriptures as the guide to their life and the best of all literature, so very little is done to give a university student any light or help towards the knowledge of our English Bible. I do not refer to the study of Theology, which is, indeed, the crowning study, the science of sciences, to which philosophy in its loftiest achievements is but the introduction, and which, let us hope, shall in the future as in the past, find fitting recognition in Queen's. I refer simply to the study of the Bible as a department of general culture, with which every well educated man should be famil-

iar. This marvellous book, which comprises a priceless and peerless literature, is relegated to theological halls as if it had been intended only for divinity students. We profess to take our morals from this source, and yet, instead of making our youth familiar with it in the university, we feed them on the very different morals and far inferior ideals of ancient Greece and Rome, much of which they must unlearn in later life. We desire our students to know their own language in its purity and to be familiar with the best thoughts that have been expressed in it, and yet we fail to introduce them to this "well of English undefiled" and to those glowing thoughts of Prophet, Psalmist and Apostle, to which no other literature makes approach. We direct them in their study of history, trying to make the past unfold for them its lessons and to picture the men most worthy of imitation, and yet we are silent about the course of that onward movement presented in our Holy Scriptures which gives us the true philosophy of history, and silent about those lofty souls who are the inspiring leaders of the Christian world. There are many reasons why the English Bible should find some place in the curriculum of a Christian university. I know no valid reason why it should not; and it may be that here, in Queen's, we have the freedom and the facility for rendering specially helpful service to our students in this important field of culture.

"As with general culture, so with technical training; the university should stand ready to extend its help in all possible ways, careful, of course, to set the first things first, to take the claimants for its support in the order of their public importance so far as the means at its disposal may permit. For the university stands for service, service of the highest kind, service to the largest possible number and along the greatest possible variety of lines. True, it must be always only a small minority of citizens that will avail themselves of the university training, but it is well for the university and well for the State to have this minority represent and influence a large number of callings. There is a certain type that some regard as the perfect product of university life and training, the man who is well informed but exclusive, critical, reserved, oracular, a consciously superior person. But, instead of aiming at producing this kind of scholar, it is rather the true aim of the university to stretch out its hand to the representatives of many classes, to help them climb the heights from whence they can get clearer, truer views of life and its manifold interests, to lead them along lines where they shall find their own life unfolding into greater fullness and perfection, to fit them for larger and ever-increasing service to their fellows? The production of a narrow and exclusive circle of scholars is not the main achievement

of the university; rather it is the wider extension of learning, the broadening of intellectual privilege, the enrichment of the nation at every point at which, by means of its great variety of students, it can reach the life of the people. The university recognizes that true wisdom does not sit solitary, that she is not exclusive, cut off in fancied superiority from fellowmen, but that she "rejoices in the habitable parts of the earth and her delights are with the sons of men." Hence the aims and the ideals of a university must be national. Sometimes it may be denominational in name and yet national in outlook and effort. Or it may be national in name and yet narrow and sectarian in spirit and in work. But it fails to fulfil or even to recognize its true purpose unless it broadens its range to include a national horizon and takes up its burden of service to the country at large.

"I think we may claim that this has always been the ideal of Queen's, and in trying to realize this ideal, Queen's has put forth her efforts to serve the country in a growing variety of ways frequently taking the initiative in higher educational movements. Although lack of resources has prevented her from extending technical education as widely or as rapidly as might be wished, yet her students have been able to take advantage of facilities otherwise provided for this purpose. Thus the School of Applied Science—of Mining and Engineering—which through private beneficence, backed up by Government assistance, has been established at Kingston and which is in affiliation with Queen's—furnishes the technical training desired by many of the university students; and the value of this school is shown by the increasing number in attendance and by the positions of trust and usefulness already occupied by many graduates. To this School of Mining it is proposed to add a School of Forestry. We Canadians are gradually becoming aware of the importance of caring for our forests, its importance to the nation at large, to the governments of the different provinces, and to the vast industries dependent on the lumber trade. The Board of Governors of the School of Mining in making this new departure in connection with forestry, have been greatly encouraged by the pledge of Government assistance; for the aid given to the School of Mining has been amply justified by the results, as, it is confidently expected, it will be with the School of Forestry.

"The course of lectures lately given here by Professor Fernow convinced all who heard them of the need of introducing scientific forestry into Canada; and a School of Forestry seems to be essential for training competent men who shall make the most and best of our forest resources, even in the interests of the possessors of timber limits, still more for the welfare of the Crown lands as a national asset.

Looking at the forest resources of the country, there is no point at which this department of study could, for the public weal, be so effectively carried on as here at Queen's.

"There are also other interests that might well ask the university for light and leading, men of other callings that might ask what we can do to fit them for their work so that they may be equipped for the most helpful service to the nation. When, for instance, a young man desires to take up journalism and comes to the university for guidance, what can we do for him? The printer's office was Joe. Howe's college, and it has been the training school for not a few of our most prominent public men. But the race to-day is to be won by the well-equipped. Here is a calling that has great and increasing influence. The journalist is one of the most active and powerful educationists of our day, doing much to mould the opinion and life of the people. Can the university do anything to help him qualify for his profession, anything more than merely passing him through such classes as he wishes to take? Can it select and combine a course of studies for him more wisely than he could choose for himself—for instance, of languages and philosophy, of history, political economy and literature, giving him some helpful training in his life-work? It can; and here in Queen's, although the selection of studies for this purpose has not been formally made a special course, yet, under the guidance of a member of the staff, such a choice of subjects has been made and is being followed with a view to special preparation for journalism.

"The same may be done and is, indeed, here being done for young men who look forward to a mercantile career. It is often asked: has the university no special help for young men who look forward to commercial life? We know that the manufacturer is dependent on the investigations of science; the pulp mill and the iron works require their chemists; the university laboratory, if properly equipped, should be a field for research that tells on the commerce of the country. All this we recognize, but if there come to us a young man who desires to fit himself for dealing in a large and effective way with the work and problems of a mercantile career, what help can the university offer him? This at least, we can do: we can select for him from our lists of subjects a course or group of studies that shall be specially suited to prepare him for commercial life, studies, for instance, in English language, literature and history, in political economy, in mathematics, in modern languages, and in some branch of science or philosophy. This is already being done here, and, under the guidance of a member of our staff, several are pursuing such a special course. But the young man himself should largely be relieved of the difficulty and uncertainty of selecting a course of studies.

He has not the experience to do this wisely. He should feel entitled to turn to the university for guidance. The Faculty, rather than the individual, should suggest and choose the course of study most likely to prove helpful to him in dealing with the problems that must face him in business and in citizenship.

"At the same time those who seek to be thus fitted for commercial life must remember that the university cannot give the technical training of a merchant's office. Merchants and bankers would not wish it to attempt this, for they have their own way of doing it. And they must also remember that the value of any university training to a young man going into business depends on the spirit with which he takes up his duties after he passes from the college class-room to the commercial office. He may foolishly assume that he is already superior to some of the clerks who were in the office before him, and may be unwilling to begin where they began. If so, his college training has seriously unfitted him, blinding him to the need of that technical training in which he is as yet inferior to those who may not have his general education or ability. But, if he is willing to learn, he may find that, after mastering the office duties, he can bring to the general business an insight, grasp and breadth of knowledge, such as will enable him, other things being equal, soon to forge ahead of his less educated competitors.

"These are illustrations of the way in which the modern university may extend its helpfulness to the nation, touching the life and welfare of the people at many points, which in the older idea of the university could not be taken into account. The important fact is that the university stands for service—the highest kind of service—to the nation. The material help it gets is given back transmuted into intellectual and moral aid and multiplied a thousandfold. It is possible that it may render the largest service by giving rare and exceptional education to a few who become prominent as leaders of their fellows; eventually, however, its value must be measured by the extent of its influence, by the number whom it can reach and serve, for, with the college as with the individual, "he that is greatest of all is servant of all."

"Of course, if this be the ideal that is cherished, there can be no finality in the life and progress of the university. Its face must be turned towards the future, ever growing to meet the growing needs of the community. For the fulfilment of such an aim, the university must, of course, be always in want of funds, with ever new demands upon its treasury, and, therefore, with ever fresh appeals to friends and benefactors. I need not remind you that this has been characteristic of the history of Queen's. This university was founded in

faith and self-sacrifice, and by faith and self-sacrifice have its walls been reared; nor do I know a firmer foundation or more binding cement. Hitherto it has been upon the moderate contributions of many friends that Queen's has had to rely. Is it too much to hope that the time has come when, from among her wealthier friends, some may come forward to assist her with larger gifts than she has yet received from individual benefactors? It is difficult to suggest any other lines by which the wealth of the rich can so largely benefit the nation as through the upbuilding of a vigorous and progressive university, which seeks to recognize and meet the people's needs in higher education.

"If any have withheld their support on the ground that Queen's was denominational, that plea is no longer truthfully possible. Even when denominational in name, this university was national in spirit, and we expect to have it made as national by statute, as it has long been in practice. This is but its natural development along the lines of its past history, the result of its growth into a larger life than was contemplated for it by its founders. Locally, it has become the university of Eastern Ontario, from which it draws the majority of its students, but in character, in aim, in service, it is national. It has its friends, benefactors and graduates throughout the country, a constituency distinctively its own, whose members are united by their loyal attachment to the university and by their interest in its progress and prosperity. One after another passes away from her council board and from her list of benefactors, but Queen's remains a living, growing organism, not dependent upon even the wisest of her counsellors, or the most bountiful of her benefactors, because drawing to herself, by the very power of her vitality, the elements requisite for her support. The life so strenuously maintained in the past, so vigorous and helpful to-day, is the best pledge of what awaits her in the years to come; and our hope is that with increasing equipment, by wisely directed effort, through the earnest co-operation of all who seek her good, Queen's may share and may assist the expanding life of our country, and may from year to year become more capable of rendering the loftiest kind of service to the nation."

CURRENT EVENTS.

THE "MACHINE" IN CANADIAN POLITICS.

THE famous Mr. Dooley somewhere makes the sage remark that "there must be something in being good, else iviry wan wouldn't be pretindin' he was so." Mr. Dooley's saying is not original except in its dress, being only an old French epigram cleverly disguised in Chicago Irish. What surprises one most about it is that it was coined or re-coined in America. For nowhere on earth has one ever heard of so many open and unabashed practitioners, Boss Crokers, Boss Craytons, Deverys, Ziegenheims, Amesess, etc., as in the great republic; gentlemen who when detected in the grossest frauds coolly turn round and ask, "Well, what are you going to do about it?" Yet the topmost layer of this body politic consists on the whole of most distinguished and honourable gentlemen, amongst them some of the cleverest statesmen of the time.

There is no fear that our leading politicians in Canada will forget that a reputation for honesty is a valuable party asset. The country is still too sound for that. No one could say that the tone of political life as a whole has been lowered under the rule of Sir Wilfrid Laurier and his colleagues. On the contrary their very names, with a few exceptions which the country has vaguely begun to mark, appear even to a conservative a barrier against corruption penetrating to high places. Yet it can hardly be doubted that in certain respects, particularly in methods of electioneering, politics in Canada have been taking a turn for the worse. The old way was to bribe the voter, the new way adds fraud to bribery, fraud organized on a scale that really takes the franchise out of the electors' hands. It is not a matter which touches directly the long known and respected names amongst the Liberal leaders. It is mainly connected with inferior spheres, with the development of "machine politics" amongst us, with the employment of disreputable election agents, with the reckless use of the "saw-off" system by both parties, and perhaps with the presence of some âmes damnées in the higher circles of politics.

No doubt it is hard at times to find a clear line of distinction between the permissible and the non-permissible in party politics, yet we may know broadly when we have passed the boundary. It is a dangerous thing, for example, when statesmen who could not for a moment be supposed capable of soiling their hands in doubtful

matters begin to palliate or regard lightly the doings of others in that way. The release of Mr. Arthur Brunet, to which it appears the Conservative leader, Mr. Monk, was a consenting party, was a thing of ill-omen. All the most daring forms of election fraud, ballot-switching, impersonation, falsification of the poll-books were partially condoned by that release. That matter concerned Quebec province and the Dominion Government. The unpunished frauds in Ontario constituted a still graver offence against public morality. Such fine manoeuvring as went on between both parties in North Bruce can only end in confusing the moral sense of the constituencies.

Our leading men are, most of them, above suspicion, yet it must be added that some of them, and those, too, of the better class, have fallen into a rather easy style of referring to certain practices current amongst us. One hears sayings quoted from them which have a somewhat cynical flavour of acquiescence in all that is going on. For example, it may be part of Mr. Tarte's great courage and candour, but his famous saying, "Elections are not made with prayers" is of the kind that sticks in the memory of the young aspirants who figure in our local political associations and has no good effect on them. It was Mr. Tarte too, I am sorry to say, who in his memorable letter to the Liberal Committee in Montreal (Jan. 5th, 1903) reminded them in elegant but unmistakeable language that "The funds of *La Patrie* had been more than once at "the disposal of the party organizers in Montreal, in moments of "shortage, at the psychological moments which are known to all "those who have been seriously involved in political struggles." Is there any other way of reading that language but one? Does it not mean that Mr. Tarte and *La Patrie* came down with the money when votes had to be purchased at the critical moment on election day?

After all there is some difference, from the point of view of public morality, between reluctantly overlooking certain practices which exist, and publicly proclaiming their use a matter of course. The one course may act as a restriction on them, the other is sure to bring on new levels of degeneration. It is the difference Tacitus noted long ago as existing between the old German tribes and the Romans of his own time, *Nec corrumpere et corrumpi seculum vocatur*. Corruption there might have been amongst the Germans, but they did not at least regard it as a matter of course. Statesmen in all times have recognized the difference.

One must hope, too, that it was merely a momentary failure of temper in a statesman of Sir William Mulock's standing that led him

to declare that "The Liberals owe Toronto nothing." Surely he did not mean to announce the principle that the Government pays for votes by public grants. The Government, after all, represents the interests of the country, not of a party; and the principle of our public life is that all Toronto has a right to expect from one party she has a right to expect from the other. If there should be any difference, it is something to be kept at its lowest point, something to be ashamed of, not something to be proclaimed as a rule of public life.

Such is the influence which the growth of machine politics is bound to have on the country. At the present moment the cloud lies heaviest over Ontario. The Premier, Mr. Ross, was certainly bred in a different school. The line he has taken in life, the tone of his utterances used to be far removed from the cynicism of the modern politician. He is one of the ablest of our statesmen, keen, bold, large-minded, never quite losing his original moral force even in the midst of parliamentary finesse, without a rival in his own arena. Criticism has never successfully assailed the general efficiency of his administration.

But under his rule also, the machine has been able to extend its widely corrupting influence in Ontario. Ontario, the intellectual and moral centre of Canada, has even acquired an undesirable notoriety for electioneering fraud. And no matter how honest the intentions of the administration may be, we know that one species of fraud is not likely to be long alone. Admit one, and we shall soon have all the chthonian brotherhood trooping up from below.

Undoubtedly, Mr. Ross has been in a tight place as regards elections. Ever since the general election he has been fighting to keep in power in power with a majority so small that, as Goldwin Smith pointed out the other day, it made every decision in an election court and every bye-election of extraordinary importance. It was perhaps a natural course for a bold and able man to take in a country where the people are not so sensitive on fine points in the working of the constitution as they are in Great Britain. But it put a fearful strain on the election agents and the gentlemen who manage things, a strain perhaps greater than they could bear. It is not altogether a matter of accident that the political evil has come to a head and burst in Ontario.

Are our politicians beyond considering that it is possible to become too clever at electioneering for the good of the country, and that the efficiency of the machine and the grand style of campaigning by Cabinet Ministers, Federal and Provincial united, may be developed to an extent which partly stifles the voice of the country and partly corrupts its will?

In Ontario the question of the moment is the statement made by Mr. Gamey, the member for Manitoulin, that attempts were made to bribe him to transfer his allegiance to the Government. As far as that is a specific charge against Mr. Stratton, a commission of judges, with the ordinary rules for the relevancy of evidence, may be a fit enough tribunal to investigate it; every individual, even a Cabinet minister, has a right to the protection of the law. For anything more, the country itself in such cases must be the ultimate tribunal, must condemn or clear. If we are incapable of doing that, no judges or commissions can help us very much. In any case it is to be hoped that the thunderstorm raised by the member for Manitoulin will do something to purify the political atmosphere.

KAISER WILLIAM AND THE HIGHER CRITICISM.

Kaiser William is a much wiser man than some of the critics who are after him in the daily papers suspect. His latest utterance on the subject of the Higher Criticism is not so irrelevant to the duties of the ruler of an empire as it might seem. The Kaiser is very well aware that the fabric of society must rest on some basis of religious faith. The Bible after all, even from the point of view of free thought, remains the supreme expression of that faith, the record of a race and an epoch in which the religious consciousness was strongest and clearest. To preserve the Bible, therefore, as a vital element in modern life and thought is the important thing at this time. And the Kaiser has come to see that this is precisely what the Higher Criticism is doing. It is mediating between the reason of the modern man and the capacity for faith which exists in him. It is seeking to prevent that disastrous severance between the modern intellect and the religious consciousness which is so evident in Catholic countries, where the Church has continued to insist on its proud motto *Semper eadem*. What has been the result in those Catholic countries? Look at France where the conflict has now become a combat to the death, the civil government insisting on the absolute exclusion of Church influence in the education of youth and of religious ceremonial in every function of state. That is the result of making all mediation between modern thought and the old dogmatic position impossible. France in its active, intellectual part has been dischristianized, and that means much more than the rejection of dogma.

Such a bitter conflict could not easily arise in Protestant countries. In them no one feels any particular danger in

admitting clergymen to a share in the control of the national education. Their influence is felt to be helpful in preserving sound traditions, what is best in the standards of the past, while they are generally liberal minded and ready to accept what is good in modern thought. And just because they can accept what is good in the new point of view they are not impelled to seek for any exclusive or preponderant influence in education. They are ready to move with others and with the progress of thought. There is thus a practical reconciliation between the two principles of faith and reason, authority and freedom. This is what the Higher Criticism has effected. This is really its fundamental aspect and explains why such phenomena co-exist in our day as that of the Combes ministry in France ousting the religious orders from any share in the education of youth, while the Balfour ministry in England is recognizing and even establishing on a national basis the right of the Church to a share in the control of education. And in doing this the latter has a strong support in the country. The really dangerous opposition arises from the accidental division of Anglicans and Nonconformists. It is not altogether, as M. Clemenceau, writing to the *Nineteenth Century*, seems to think, the political organisation of the Church which makes the conflict between its claims and those of the State in Catholic countries irreconcilable; it is at bottom its intellectual organisation.

The Kaiser with his statesmanlike sagacity has discerned the root of the matter and its very practical aspect for the national life. He has seen that to save what is of permanent value in religion, we must recognize what was temporary and inadequate in the forms in which the past embodied it. In fact we owe it to the Higher Criticism that the Bible has remained a living thing to us and not, as it is to the mass of educated men in Italy and France, a collection of obsolete fables.

It is no doubt from this point of view that the Kaiser invited a number of Lutheran clergymen to hear Professor Delitzsch lecture on the Babylonian sources of Genesis. The usual consequences followed for the disciple of Higher Criticism. Plain people who live under a limited conception of the law of non-contradiction began to fear that the Emperor was losing his faith, all the more that Professor Delitzsch himself happens to belong to the Radical wing of Biblical critics. There was general alarm amongst the orthodox, and the august William was obliged, like any Dean of Ripon, to explain how he came to be found dans cette galère. Valiantly did the Kaiser acquit himself of his task, expounding to his people the difference between the substance of faith, as he conceived it, and the

imperfect forms in which it might be expressed. It is an amusing and characteristic trait that the Emperor's explanatory letter seems to have been addressed, not to any great ecclesiastic or Doctor of the Church, or Minister of Education, or even to the Court Chaplain, but to an Admiral of the Navy. Fancy some English Benbow, or Hawke or Boscawen receiving and perusing such a letter from his sovereign.

A SCHOOL OF FORESTRY.

The question regarding a "School of Forestry" will be none the worse of the little airing it has received in the newspapers from President Loudon of Toronto and Professor Macnaughton of Queen's. In his addresses at Hamilton and St. Thomas the Professor, among other arguments, had made an eloquent appeal in favour of Queen's claims on the score of priority coupled with some reference in his vivid manner to Toronto University sailing in like a leviathan to snatch the morsel from Queen's. The sally coming fresh and warm from the generous personality of the speaker was not badly received, I believe, even by the Toronto gentlemen who happened to be present. Naturally enough, however, President Loudon, when he heard of it, hastened to rebut the charge. This he does in a letter to the *Globe* which seems to question, though not very distinctly, Queen's claims to priority in the movement to establish a School of Forestry. "The authorities at Toronto," he says, "have been considering the question for several years." Even before that, he informs us, a certain member of the staff, Dr. Jeffrey, now at Harvard, had advocated the establishment of a Forestry School. That is all natural enough. At every university one hears projects and schemes mooted in plenty, and often without anything more being done about them. New ideas of this kind are generally in the air and talked of in more quarters than the public ever hears of. All that is claimed for Queen's is that she was the first to make any public movement on the subject and draw the attention of the Government to its importance. It would be difficult, I think, to arrive at any other conclusion from the facts and dates which have been publicly recorded. For example, on the occasion of a public lecture given by Prof. Fernow in Kingston, on January 21, 1901, the Hon. Mr. Harcourt said, "he was delighted to see that the question of Forestry was receiving attention at a university. Queen's had the repu-

tation of undertaking new projects and it would be a grand thing for the country, were a school established at Queen's."

From that speech one is forced to conclude that the Toronto authorities were at that time still "considering the question" in the solemn secrecy of a conclave to which not even the Minister of Education had been admitted. The question of priority may not, as the President says, have much to do with the real merits of the question, but what importance it has, what obligations of honour to the living and the dead are involved in it, are, I think, clearly on the side of Queen's.*

But setting the question of priority aside, one comes naturally to ask, is there any necessity for a conflict between the claims of Queen's and those of Toronto University in this matter? I cannot see that the one claim excludes the other either on the ground of expense or sufficiency of instruction. That idea could only arise out of the grudging local manner we have fallen into of looking at things. The "School of Forestry" is little more than a big name attached to a Professorship of Forestry, and in a great timber country like Canada a Professorship of Forestry ought to be an essential part of the equipment of any great school of Practical Science. In a country like Canada, forestry is an important part of the training of the geologist and it would be a very useful element in the training of the engineer, who has to consider the supply of wood materials for construction. In the general education of our students of practical science a course in forestry would be both useful and popular. It would in time distribute throughout the country an amount of expert knowledge which would be of the highest value to Canada and would be turned to advantage in many ways unthought of at present.

I should like to think it was only an anxious regard for the public expenditure of the province which gives so fine an emphasis to President Loudon's words, when he says, "The Province requires a School of Forestry, and requires but one." But I am afraid it is too apparent that this conclusion is most intimately coupled in his mind with another which he announces at the end of his letter,

*In a second letter to the *Globe* which appeared after the above was printed, President Loudon states that "our representations were made to the Minister of Education prior to the earliest date mentioned in his (Professor Macnaughton's) letter, January, 1901." Does this statement really meet the point at issue? It is impossible to make public records out of private interviews and representations. If it were, surely President Loudon does not think that the public appearance of Mr. Harcourt at Kingston was a happy (or unhappy) impromptu, and had not been preceded by "representations" long enough before it took place.

namely, that as Toronto and Guelph have agreed "the location of the School may be considered as settled."

"*And requires but one.*" Is President Loudon afraid that a scientific knowledge of forestry will become too common in Canada, or does he think that the knowledge diffused from another centre at the expense of some three or four thousand dollars a year will not repay the country?

Two universities situated as Toronto University and Queen's are, ought to be a help and not a hindrance to each other. And this is particularly true at a time like the present, when educational standards are so varying and unfixed, and educational problems so much under discussion. Does any friend of Toronto University believe that if by any chance Queen's energies were to slacken and decay, it would mean an addition of strength and energy to Toronto? Has not Queen's abundantly justified her existence as a national institution in the eyes of everyone who knows what standard and vitality in education mean? The negative work of obstruction to her development is not likely to confer a crown of honour or bring any great satisfaction of conscience to anyone.

JAMES CAPPON.

The fact that the Anthracite Strike Commission in its important report has awarded to the miners an increase of ten per cent. in wages and shorter hours of labor, has occasioned a general heralding of the verdict as a sweeping victory for the miners and a justification of the strike. As a matter of fact the report has really condemned the strike and its promoters, and has most severely censured the lawlessness and brutality of the methods by which it was enforced. We hear a great deal in these days of the alarming conflict between capital and labor, and of the impending destruction of the existing social system which it portends. But, as abundantly illustrated in the coal strike, the conflict between capital and labor is scarcely at any point so bitter, and never so brutal, as the conflict between one section of labor and another. Hardly even in actual warfare is there such a ruthless disregard of the sufferings of the enemy, whether of men, women or children, as was exhibited during the late strike, in the persecution of the non-union laborer and his family, as well as of all who had the hardihood to lend them succour and comfort. The strong condemnation by the Commission of the methods of the unions, and especially of the warfare upon those of their own class

**Report of
the Strike
Commission.**

who did not choose to belong to their organizations, is of much more importance for the social peace and political safety of the community than the granting of an increase of wages. The alleged hardships of the miners' lot, as compared with that of other workers of the same grade of skill, was not admitted by the Commission. His income, if expended with ordinary prudence, was found to be capable of affording a fair standard of living. At the same time very few will regret that the Commission has found it possible and just to permit the miner a further share in the general prosperity of the country. The readiness with which the mine owners have accepted the award has suggested the question, why did they not grant these concessions at the outset? Without any desire to justify the entire policy of the mine owners, it may be pointed out that it is a very different matter to accept the decision of such a Commission, and to grant the demands of an irresponsible organization. Previous concessions, the mine owners maintain, were not regarded by the majority of the miners as a recognition on the part of the employers of the merits of the points conceded, but simply as a proof that the demands of labor could be enforced by the strength of their unions. Hence every concession was simply taken as direct encouragement for further demands. As the miners themselves have pointed out, in expressing their dissatisfaction with the verdict of the Commission, the points conceded constitute only a part, and by no means the most important part, of the demands put forward by the unions. There is, therefore, no reason to suppose that even had the employers offered to grant what the Commission has allowed, the strike could have been prevented. This conclusion is enforced when we consider by what elements among the laborers the strike was brought about and its worst features encouraged. Under the present settlement the owners are required to grant only part of the demands of the unions, and that, to the owners, the least important part, while the ever rising tide of demands has been definitely arrested for the space of three years. Definite provision has also been made for the settlement of disputes that may arise under the award. Such a settlement could not have been secured from irresponsible unions where mere boys and raw youths, as pointed out in the report of the Commission, hold the balance of power. There are lines of industry in which an increase of wages with shorter hours, such as allowed in this award, might seriously embarrass the owners. In the case of the anthracite coal trade, however, as in the building trades, the question is not whether the masters can afford the increase in wages, but whether the public

can afford it, it being in their power to pass on to the public what is charged up to them. For various reasons wood or soft coal cannot seriously interfere with the growing demand for anthracite. At the same time a high price will necessarily impede the rate at which the demand would otherwise increase. Taken in its completeness, the verdict of the Commission should give general satisfaction. For all good citizens it is most reassuring; for, while sympathizing with the desire of the miners to better their position, it utterly condemns the strenuous methods by which this otherwise legitimate object is sought. And even though the unions try to ignore this side of the report, yet the verdict of the Commission stands as a strong foundation for future judgments as to the conduct of all laborers in their disputes with employers, whether their claims be just or unjust. Above all, the report contains an important declaration of the right to life and liberty on the part of independent laborers.

The cry of 'Canada for the Canadians' has been raised with such vigor of late, and by interests which are not known to be zealous above all others for the public welfare, that one is tempted to ask, why this inordinate and sectional devotion to the public good? Are the manufacturing interests, which seem to be most aflame with patriotic zeal, becoming alarmed at the number of outsiders from the United States, Britain, and Europe, who are at present crowding into our country and appropriating to themselves such large sections of Canada? Are they afraid that if the inrush continues there will soon be little of value left for the Canadians? There are, indeed, some Canadians who have misgivings on this point, but, strange to say, the manufacturers are not among them. On the contrary they seem quite as much rejoiced at the fact of Canada being distributed to the foreigners, as they are solicitous about the theory that Canada should be strictly reserved for the Canadians. We are therefore driven to inquire more fully into this theoretic aspect of the question, and to ask what, in this connection, is meant by Canada, and who are the Canadians for whom it is to be reserved? On investigation we find that the Canada meant in the phrase, Canada for the Canadians, is not Canada at all, either in its simple physical aspect as a country, or even in its great natural resources. To these any foreigner is more than welcome. It is not even Canada in that higher and more spiritual sense which swells with pride the breast of the public orator or after-dinner speaker, the land of freedom and harmony, in which racial bitterness,

the tyranny of labor, the grasping selfishness of capital, and the political corruption which are sapping the vitals of the neighbouring Republic are unknown. Even these priceless Canadian blessings the foreigner may enjoy to the full. Where then shall we seek that Canada which is to be so jealously reserved for the Canadians? Strange to say, it turns out to be simply the right to sell goods of certain specific kinds to all who come within the range of Canadian sovereignty, and who may, therefore, be compelled by law to purchase those goods and no others, unless by handsome payments for the privilege. And who then are the Canadians for whom this right is reserved? Not, as might be supposed, Canadians in general, nor even native born Canadians, but simply that limited number of persons who happen to be engaged, personally or by simple investment of capital, in the manufacture of those specified goods the right to sell which is designated by the term 'Canada.' Now these manufacturers may be native born Canadians, or naturalized foreigners, or merely resident foreigners, or even non-resident foreigners who are simply looking for handsome profits on their investments. Thus on investigation we find that this apparently harmless and even broadly patriotic phrase 'Canada for the Canadians' simply covers the desire of a limited number of persons, partly Canadians and partly not, to have the privilege, already largely enjoyed, of forcing the great mass of the people of Canada to purchase an important part of their means of life from them, at artificially enhanced prices. Verily there is virtue in an adroit phrase. In history we find men gladly dying, and still more gladly killing others in blind devotion to cunningly worded phrases. Give me the right to make the shibboleths of a people, in prose or rhyme, and I have obtained control of their laws. As was pointed out by cynical Sophists long ago, the despot who fights his way to power may retain it in ease and comfort by merely securing the acceptance and circulation of shrewdly devised phrases which represent his interests as the sacred ideals of the people. Another profound student of human nature, Machiavelli, counsels his Prince to the same purpose, and, as we have seen, the art is no lost one in our day. Now, observing the revenue value of public franchises, it might be worth considering whether the state might not derive a handsome income from the disposal of franchises giving the exclusive right to coin and circulate phrases for the hoodwinking of the public in various specific lines. At present in tariff matters the moneys paid for securing the adoption and circulation of suitable phrases all go into the party coffers, instead of into the public

treasury. But payments for street railway and other franchises have been for the most part diverted from private, or party purses, to the public treasury. Why not these others also?

That the political atmosphere in the Province of Ontario has been in an unwholesome condition for some years past, has been quite evident to any who care to reflect on such matters. The grave political charges against a member of the Provincial
Party
Politics. Government which are now being investigated, simply serve to bring the existing situation more vividly before the minds of the people, and it is to be hoped that, whatever be the outcome of this particular investigation, the public conscience, which means a great many individual consciences, will be somewhat awakened to the dangerous trend of our political life. Unfortunately, in this connection comparisons between the two political parties are reciprocally odious. Certainly the party in power is liable to suffer most from the corrupting infection of a tainted public morality. In what proportion the blame for this state of affairs is to be distributed between the chief officers and organizers of the political parties, and the general public which permits itself to be manipulated by the party machinery, is difficult to determine. Certain it is, however, from even a modest acquaintance with party politics, that the reputed political leaders are at best flowing with the current, seldom steering an independent course. They have managed to secure a prominent place in the van of the party procession, but they are being carried along at the head of the procession, they are not really leading it. Slowly but surely the people of Canada have become the victims of the American political machine, though its more mature fruits have not yet been gathered by us. The people in general no longer take a vital interest in the selection of the candidates for their suffrages. A very limited number of active party workers in each constituency select couple of persons who are put up as candidates by the rival political organizations. The candidates are usually chosen, either from their control of the party organization, or with a view to capturing certain local interests which may hold the balance of power. This latter sometimes results in the choice of a better candidate than the organization would normally have selected, but not unfrequently it results in the choice of a lower type. The only choice which is permitted to the general public on election day is that between the party nominees. Even this, however, is not a free choice, for, as most of the previous electioneering and the subsequent congratula-

tions and condolences unblushingly proclaim, everything depends on the energies of the political workers and organizers. In abstract theory we are supposed to be governed by parliamentary representatives chosen by the free votes of a free people. In concrete fact the election of a candidate is with naive honesty attributed to the splendid work done by the party organizers. Thus are our representatives chosen for us by machinery, and we indolently accept the process, for it has the merit of all labor saving machinery that it requires the attention of only a few expert operators who understand its mechanism, and it relieves the ordinary citizen of the personal worry and responsibility of determining what is best for the country and how it is to be secured. Now where we have such a system, the experts who operate the machine are, generally speaking, of two classes. There are those who are naturally enthusiastic partizans, who enjoy a political contest for its own sake, and who will, in the excitement of the struggle, put forth exceptional efforts and sacrifice considerable time and means in order to win. Then there are those, and they are the majority, who are in the business for its rewards, and these rewards are of the most varied kinds. They range all the way from the gratification of personal ambition, which in certain forms is quite legitimate, and in others not so, to the securing of personal favours, business preferences, or appointments which are of a pecuniary value, and on to the obtaining of pecuniary value directly in the shape of money. The inevitable practical logic of such a situation is that first to obtain and afterwards to retain office is the absorbing interest in practical politics. Neither political party has reasoned political convictions by which it is willing to stand or fall. Each is singularly open to conviction where party interests are concerned. In fact there is little true party government, it is simply a struggle of the ins and outs.

A. SHORTT.



THOUGHTS.

[HEARD Plunket Greene sing an old air by Lully, Louis the Great's court composer, the words were by Quinault :

Bois épais redouble ton ombre,
Tu ne saurais être assez sombre,
Tu ne peux trop cacher
Mon Malheureux amour.

There was a grave sweetness in the melody, a well-bred tone and finish, an absence of all vulgar sensational expression, of the *Meet-me-once-again, once again, once AGAIN* kind, that charmed one. Yes, it evidently belonged to the time when gentlemen lived in lace and ruffles and ladies in hoops sat "stately at the clavi-chord ;" not to that in which girls bang at the piano with "Mr. Dooley" and "There'll be a hot time in the old town to-night." There is a good deal of the nigger cake-walk and rag-time element in our popular modern music.

It is true, in a sense, as Prof. Dowden says, that Shelley's poetry is not instructive to the adult mind. The meaning of that is that the point of view and the framework of theory in his poetry is generally immature and unpractical, that the philosophical analysis of history contained in *Queen Mab* and the *Prometheus Unbound* has the shallow character of the 18th century revolt. But the virtue of Shelley as a poet is not there. It is in his power of interpreting for us the subtler and finer elements of beauty in life, the power, for example, shown in his *Lines among the Euganean Hills* of kindling the imagination with a sense of what once was great in Venetian history ; or the power of rendering the magical charm of sunlight and sea on the shore of Baiæ :

The blue Mediterranean where he lay,
Lulled by the coil of his crystalline streams
Beside a pumice isle in Baioc's bay,
And saw in sleep old palaces and towers
Quivering within the wave's intenser day.

Shelley had not a sound working theory of society or the State, but he had the power of waking that finer imaginative consciousness in man without which life would not be worth living.

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